Refine Search

Search Results -

Term	Documents
@PY	8183499
(1 AND (@PY < "2003")).PGPB,USPT.	108
(L1 AND @PY<2003).PGPB,USPT.	108

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DB=PGPB,USPT; THES=ASSIGNEE; PLUR=YES; OP=ADJ			
L14	L1 and @py<2003	108	L14
L13	L1 and resisn with (cobalt|co)	0	L13
L12	L10 and peptide	0	L12
L11	L10 and protein	0	L11
L10	L9 and purification	27	L10
L9	L1 and @py<2003	108	L9
L8	L7 and protein	5	L8
L7	L1 and column	63	L7
L6	L1 and protein purification	1	L6
L5	L1 and protein	7	L5
L4	L3 and protein	0	L4
L3	L2 and resisn with cobalt	0	L3

L2	L1 and @py<2003	108	L2
L1	chelate with resin with (iron|fe)	130	L1

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(38 AND 37).PGPB,USPT.	2
(L38 AND L37).PGPB,USPT.	2

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L39	L38 and L37	2	L39
L38	immobilized metal ion affinity resin same immobilized metal ion	7	L38
L37	hard metal ion	28	L37
L36	chelate resin with iron	29	L36
L35	L34 and metal	16	L35
L34	L29 and removal same impurities	20	L34
L33	L32 and purifying	10	L33
L32	L1 and @py<2003	108	L32
DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI; THES=ASSIGNEE; PLUR=YES; OP=ADJ			
L31	L29 and column	57	L31
L30	L29 and IMAC	1	L30
L29	L1 and @py<2003	108	L29
L28	L25 and chelate resin	26	L28

L27	L25 and iron|cobalt|hard metal|intermediate	2218844	L27
L26	L25 and (hard and intermediate ions)	0	L26
L25	L24 and purification	1558	L25
L24	IMAC and protein	1609	L24
L23	L22 and iron same cobalt some protein	0	L23
L22	IMAC	2348	L22
L21	IMAC same (hard and intermediate metal ions)	5	L21
DB=PGPB,USPT; THES=ASSIGNEE; PLUR=YES; OP=ADJ			
L20	US 4,569,794	1	L20
L19	US4,569,794	0	L19
L18	US 5,310,663	1	L18
L17	US 5,284,933	1	L17
L16	US 6294342 B1	1	L16
L15	US 6294343 B1	1	L15
L14	L1 and @py<2003	108	L14
L13	L1 and resisn with (cobalt|co)	0	L13
L12	L10 and peptide	0	L12
L11	L10 and protein	0	L11
L10	L9 and purification	27	L10
L9	L1 and @py<2003	108	L9
L8	L7 and protein	5	L8
L7	L1 and column	63	L7
L6	L1 and protein purification	1	L6
L5	L1 and protein	7	L5
L4	L3 and protein	0	L4
L3	L2 and resisn with cobalt	0	L3
L2	L1 and @py<2003	108	L2
L1	chelate with resin with (iron|fe)	130	L1

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L1          13 GEL IMMOBILIZED IRON

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L1   ANSWER 1 OF 13  BIOSIS  COPYRIGHT (c) 2005 The Thomson Corporation.  on
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ACCESSION NUMBER: 1983:296825 BIOSIS
DOCUMENT NUMBER: PREV198376054317; BA76:54317
TITLE: IMMOBILIZED METAL ION AFFINITY ADSORPTION AND IMMOBILIZED METAL ION AFFINITY CHROMATOGRAPHY OF BIO MATERIALS SERUM PROTEIN AFFINITIES FOR **GEL IMMOBILIZED IRON** AND NICKEL IONS.
AUTHOR(S): PORATH J [Reprint author]; OLIN B
CORPORATE SOURCE: INST BIOCHEM, UPPSALA BIOMED CENT, S-751 23 UPPSALA, SWEDEN
SOURCE: Biochemistry, (1983) Vol. 22, No. 7, pp. 1621-1630.
CODEN: BICHAW. ISSN: 0006-2960.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: ENGLISH

AB Immobilized metal ion affinity adsorption (IMA adsorption) is a collective term that is proposed to include all kinds of adsorptions whereby metal atoms or ions immobilized on a polymer cause or dominate the interaction at the sorption sites. IMA chromatography is one of the most powerful methods available to date for protein fractionation although this is not as yet widely recognized. This study deals with the theoretical aspects of IMA adsorption and its practical applications as exemplified by the various results reported here. The synthesis of iminodiacetate-substituted agarose (IDA-agarose) and tris(carboxymethyl)ethylenediamine-agarose (TED-agarose) is described. Many types of metal ions can easily be immobilized on these gel derivatives to form IMA adsorbents. No damage to the proteins was observed during the adsorption-desorption process. After performance of an experiment, the gels can easily be regenerated and can be loaded with the same or a different metal ion for an ensuing experiment. Specific adsorption is demonstrated for [human] serum proteins on immobilized Ni(II) and Fe(III). Ligand-specific desorption (affinity elution) is also demonstrated by including in the buffer system certain solutes which are similar to or identical with some particular amino acids found in proteins. High concentrations of certain salts that affect the structure of water, such as Na2SO4, promote coordinate covalent bonding of proteins by a mechanism that is apparently similar to that found in hydrophobic interactions. Neutral detergents and aquoorganic solvents may be used. This opens up the possibility for the fractionation of membrane components. The IMA-adsorption method could also be expanded to other areas besides protein fractionation.

L1 ANSWER 2 OF 13 BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN
ACCESSION NUMBER: 1983-04587 BIOTECHDS
TITLE: Immobilized metal ion affinity adsorption and immobilized metal ion affinity chromatography of biomaterials: serum protein affinities for **gel-immobilized iron** and nicketl ions;
and potential application to the fractionation of membrane components
AUTHOR: Porath J; Olin B
LOCATION: Institute of Biochemistry, Uppsala Biomedical Center, S-751 23 Uppsala, Sweden.
SOURCE: Biochemistry; (1983) 22, 7, 1621-30
CODEN: BICHAW
DOCUMENT TYPE: Journal
LANGUAGE: English
AN 1983-04587 BIOTECHDS

AB Immobilized metal ion affinity (IMPA) adsorption is a collective term that is proposed to include all kinds of adsorpioadsorptions whrewhereby metal atoms or ions immobilized on a polymer cause or dominate the interaction at the sorption sites. It is one of the most powerful methods available to date for protein fractionation. The synthesis of iminodiacetate-substituted agarose and tris(carboxymethyl) ethylenediamine agarose is described. The performance of these gel derivatives in adsorption-desorption processes is discussed. Specific adsorption is demonstrated for serum proteins on immobilized Ni(II) and

Fe(III). The possibility of using the method for the fractionation of membrane compoencomponents is discussed. The IMA-adsoprption method could also be expanded to other areas besides protein fractionation. (22 ref)

L1 ANSWER 3 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2000:66432 CAPLUS
DOCUMENT NUMBER: 132:231011
TITLE: Oxidation of immobilized iron(II)-1,10-phenanthroline complexes by cerium(IV): a probe into the site accessibility of metal complexes covalently attached to silica sol-gels
AUTHOR(S): Kloster, G. M.; Watton, S. P.
CORPORATE SOURCE: Department of Chemistry, Virginia Commonwealth University, Richmond, VA, USA
SOURCE: Inorganica Chimica Acta (2000), 297(1-2), 156-161
CODEN: ICHAA3; ISSN: 0020-1693
PUBLISHER: Elsevier Science S.A.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Mixed-ligand Fe(II)-1,10-phenanthroline complexes containing zero, one, two, or three ligands with triethoxysilyl termini were incorporated into Ce(IV)-containing SiO2 sol-gels by doping the sols prior to gelation. The alkoxysilyl termini ensured that the complexes were covalently bound to the silica gels. Complexes attached to the gels were significantly more stable towards oxidation by Ce(IV) than complexes bearing no tethers. The mixed ligand complexes can be prepared only as a mixture of species due to the unusual trend for binding consts. between phenanthroline and Fe (H. Irving, D.H. Mellor, J. Chemical Society (1962) 5222). Statistical anal. of the data for the mixts. revealed a sigmoid dependence of the stabilization with respect to the number of tethers. Contributions from inner-sphere pathways are believed to account for this nonmonotonic dependence.
REFERENCE COUNT: 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 4 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1991:521089 CAPLUS
DOCUMENT NUMBER: 115:121089
TITLE: Catalytic activity of hemin immobilized in polymeric matrixes
AUTHOR(S): Potapov, G. P.; Alieva, M. I.; Imshenik, V. K.
CORPORATE SOURCE: Syktyvkar. Gos. Univ., Syktyvkar, USSR
SOURCE: Izvestiya Vysshikh Uchebnykh Zavedenii, Khimiya i Khimicheskaya Tekhnologiya (1991), 34(2), 80-4
CODEN: IVUKAR; ISSN: 0579-2991
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB The catalytic activity of Fe-porphyrin covalently bonded to polyacrylamide gel during the oxidation of cysteine or Na2S by O2 was studied. The activity of the complex exceeds the catalytic activities of Fe-porphyrin complexes coordinatively bonded to polymers containing different functional groups. The polymer gel-immobilized Fe-porphyrin is not washed out into the solution and can be reused many times.

L1 ANSWER 5 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1983:122223 CAPLUS
DOCUMENT NUMBER: 98:122223
TITLE: Immobilized metal affinity adsorption and immobilized metal affinity chromatography of biomaterials. Serum protein affinities for **gel-immobilized iron** and nickel ions
AUTHOR(S): Porath, Jerker; Olin, Birgit
CORPORATE SOURCE: Inst. Biochem., Uppsala Biomed. Cent., Uppsala, S-751

23, Swed.
SOURCE: Biochemistry (1983), 22(7), 1621-30
CODEN: BICHAW; ISSN: 0006-2960
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The theor. aspects of immobilized metal ion affinity (IMA) adsorption are discussed, and its practical applications are exemplified. The syntheses of iminodiacetate-substituted agarose and tris(carboxymethyl)ethylenediami ne-agarose are described. Many types of metal ions can be immobilized easily on these gel derivs. to form IMA adsorbents. No damage to proteins during the adsorption-desorption process was observed After an experiment, the gels can be regenerated easily and loaded with the same or different metal ion for an ensuing experiment Specific adsorption is demonstrated for serum proteins on immobilized Ni2+ and Fe3+. Ligand-specific desorption (affinity elution) also is demonstrated by including in the buffer system certain solutes which are similar or identical to some particular amino acids found in proteins. High concns. of certain salts that affect the structure of water, such as Na2SO4, promote coordinate covalent bonding of proteins by a mechanism that is apparently similar to that found in hydrophobic interactions. Neutral detergents and aqueous-organic solvents may be used. This opens up the possibility for the fractionation of membrane components. The IMA-adsorption method can also be expanded to other areas besides protein fractionation.

L1 ANSWER 6 OF 13 LIFESCI COPYRIGHT 2005 CSA on STN
ACCESSION NUMBER: 83:14545 LIFESCI
TITLE: Immobilized metal ion affinity adsorption and immobilized metal ion affinity chromatography of biomaterials. Serum protein affinities for **gel-immobilized iron** and nickel ions.
AUTHOR: Porath, J.; Olin, B.
CORPORATE SOURCE: Inst. Biochem., Uppsala Biomed. Cent., S-751 23 Uppsala, Sweden
SOURCE: BIOCHEMISTRY (WASH.)., (1983) vol. 22, no. 7, pp. 1621-1630
DOCUMENT TYPE: Journal
FILE SEGMENT: L
LANGUAGE: English
SUMMARY LANGUAGE: English
AB Immobilized metal ion affinity adsorption (IMA) adsorption) is a collective term that is proposed to include all kinds of adsorptions whereby metal atoms or ions immobilized on a polymer cause or dominate the interaction at the sorption sites. IMA chromatography is one of the most powerful methods available to date for protein fractionation although this is not as yet widely recognized. This study deals with the theoretical aspects of IMA adsorption and its practical applications as examplified by the various results reported here. Specific adsorption is demonstrated for serum proteins on immobilized Ni(II) and Fe(III). Ligand-specific desorption (affinity elution) is also demonstrated by including in the buffer system certain solutes which are similar to or identical with some particular amino acids found in proteins.

L1 ANSWER 7 OF 13 MEDLINE on STN
ACCESSION NUMBER: 83204761 MEDLINE
DOCUMENT NUMBER: PubMed ID: 6849872
TITLE: Immobilized metal ion affinity adsorption and immobilized metal ion affinity chromatography of biomaterials. Serum protein affinities for **gel-immobilized iron** and nickel ions.
AUTHOR: Porath J; Olin B
SOURCE: Biochemistry, (1983 Mar 29) 22 (7) 1621-30.
Journal code: 0370623. ISSN: 0006-2960.
PUB. COUNTRY: United States

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
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Last Updated on STN: 19970203
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AB Immobilized metal ion affinity adsorption (IMA adsorption) is a collective term that is proposed to include all kinds of adsorptions whereby metal atoms or ions immobilized on a polymer cause or dominate the interaction at the sorption sites. IMA chromatography is one of the most powerful methods available to date for protein fractionation although this is not as yet widely recognized. This study deals with the theoretical aspects of IMA adsorption and its practical applications as exemplified by the various results reported here. The synthesis of iminodiacetate-substituted agarose (IDA-agarose) and tris(carboxymethyl)ethylenediamine-agarose (TED-agarose) is described. Many types of metal ions can easily be immobilized on these gel derivatives to form IMA adsorbents. We have not observed any damage to the proteins during the adsorption-desorption process. After performance of an experiment, the gels can easily be regenerated and can be loaded with the same or a different metal ion for an ensuing experiment. Specific adsorption is demonstrated for serum proteins on immobilized Ni(II) and Fe(III). Ligand-specific desorption (affinity elution) is also demonstrated by including in the buffer system certain solutes which are similar to or identical with some particular amino acids found in proteins. High concentrations of certain salts that affect the structure of water, such as Na2SO4, promote coordinate covalent bonding of proteins by a mechanism that is apparently similar to that found in hydrophobic interactions. Neutral detergents and aquoorganic solvents may be used. This opens up the possibility for the fractionation of membrane components. The IMA-adsorption method could also be expanded to other areas besides protein fractionation.

L1 ANSWER 8 OF 13 PASCAL COPYRIGHT 2005 INIST-CNRS. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 1983-0523009 PASCAL
TITLE (IN ENGLISH): Immobilized metal ion affinity adsorption and immobilized metal ion affinity chromatography of biomaterials. Serum protein affinities for **gel -immobilized iron** and nickel ions
AUTHOR: PORATH J.; OLIN B.
CORPORATE SOURCE: Uppsala biomedical cent., Uppsala 75123, Sweden
SOURCE: Biochemistry (Easton), (1983), 22(7), 1621-1630, 23 refs.
ISSN: 0006-2960
DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: United States
LANGUAGE: English
AVAILABILITY: CNRS-9758
AN 1983-0523009 PASCAL

L1 ANSWER 9 OF 13 PROMT COPYRIGHT 2005 Gale Group on STN

ACCESSION NUMBER: 89:285008 PROMT
TITLE: Product information section. (Clinical Laboratory Reference 1989) (buyers guide)
SOURCE: Medical Laboratory Observer, (Annual 1989) Vol. 21, No. 13, pp. 16(90).
ISSN: ISSN: 0580-7247.
PUBLISHER: Nelson Publishing
DOCUMENT TYPE: Newsletter
LANGUAGE: English
WORD COUNT: 61023

FULL TEXT IS AVAILABLE IN THE ALL FORMAT

AB PRODUCT INFORMATION SECTION
THIS IS THE FULL TEXT: COPYRIGHT 1989 Nelson Publishing

Subscription: $65.00 per year. Published monthly. 2500 N. Tamiami Trail, Nokomis, FL 34275-3482.

L1 ANSWER 10 OF 13 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation. on STN

ACCESSION NUMBER: 83:148637 SCISEARCH
THE GENUINE ARTICLE: QH438
TITLE: IMMOBILIZED METAL-ION AFFINITY ADSORPTION AND IMMOBILIZED METAL-ION AFFINITY-CHROMATOGRAPHY OF BIOMATERIALS - SERUM-PROTEIN AFFINITIES FOR **GEL-IMMOBILIZED IRON** AND NICKEL IONS
AUTHOR: PORATH J (Reprint); OLIN B
CORPORATE SOURCE: UPPSALA BIOMED CTR, INST BIOCHEM, S-75123 UPPSALA, SWEDEN (Reprint)
COUNTRY OF AUTHOR: SWEDEN
SOURCE: BIOCHEMISTRY, (1983) Vol. 22, No. 7, pp. 1621-1630.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE
LANGUAGE: ENGLISH
REFERENCE COUNT: 22

L1 ANSWER 11 OF 13 USPATFULL on STN

ACCESSION NUMBER: 2004:190180 USPATFULL
TITLE: Phosphoprotein detection reagent and methods of making and using the same
INVENTOR(S): Howe, Alan, Essex Junction, VT, UNITED STATES
PATENT ASSIGNEE(S): The University of North Carolina, Chapel Hill, NC (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2004146950	A1	20040729
APPLICATION INFO.:	US 2003-719990	A1	20031121 (10)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2002-428070P	20021121 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: JENKINS & WILSON, PA, 3100 TOWER BLVD, SUITE 1400, DURHAM, NC, 27707
NUMBER OF CLAIMS: 38
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 8 Drawing Page(s)
LINE COUNT: 1660
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A phosphoprotein detection reagent that selectively binds phosphoamino acids. Methods of generating and employing the reagent are also provided, as are methods of detecting modulation of protein phosphorylation are disclosed. Methods of detecting a change in state of a cell are also disclosed. Additionally, a kit for the detection of phosphoproteins is also disclosed.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L1 ANSWER 12 OF 13 USPATFULL on STN

ACCESSION NUMBER: 2001:75188 USPATFULL
TITLE: Fluorescent energy transfer ligand interaction assay on a lipid film
INVENTOR(S): Keinanen, Kari, Espoo, Finland

Laukkanen, Marja-Leena, Turku, Finland
Soderlund, Hans, Espoo, Finland
PATENT ASSIGNEE(S): Valtion Teknillinen Tutkimuskeskus, Finland (non-U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 6235535	B1	20010522	
	WO 9800714		19980108	
APPLICATION INFO.:	US 1998-202976		19981224	(9)
	WO 1997-FI419		19970630	
			19981224	PCT 371 date
			19981224	PCT 102(e) date

	NUMBER	DATE
PRIORITY INFORMATION:	FI 1996-2686	19960628

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Le, Long V.
ASSISTANT EXAMINER: Padmanabhan, Kartic
LEGAL REPRESENTATIVE: Evenson, McKeown, Edwards & Lenahan, P.L.L.C.
NUMBER OF CLAIMS: 11
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Figure(s); 2 Drawing Page(s)
LINE COUNT: 706
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB This invention relates to a fluorescence-based immunoassay method for the detection of an analyte, or for the measurement of its concentration in a biological sample. The method is based on the ability of a multivalent analyte to induce aggregation of receptor molecules labeled with a fluorophore, which molecules are anchored to and are freely mobile on a lipid membrane, and thereby cause changes in the fluorescence.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L1 ANSWER 13 OF 13 USPATFULL on STN
ACCESSION NUMBER: 93:100859 USPATFULL
TITLE: Method for isolation and purification of enzyme-antibody conjugates
INVENTOR(S): Sorensen, Keld, Roscoe, IL, United States
PATENT ASSIGNEE(S): Pierce Chemical Company, Rockford, IL, United States (U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 5266686		19931130	
APPLICATION INFO.:	US 1992-951224		19920925	(7)

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Wityshyn, Michael G.
ASSISTANT EXAMINER: Sayala, C.
NUMBER OF CLAIMS: 8
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Figure(s); 1 Drawing Page(s)
LINE COUNT: 216
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A process is described for isolating an enzyme-antibody conjugate, wherein the enzyme is horseradish peroxidase or alkaline phosphatase, from an aqueous mixture of said conjugate and unconjugated enzyme. The process involves contacting the mixture with a water insoluble stationary phase having the Ni.sup.+2 ion chelated thereto and binding said conjugate to the stationary phase. The phase containing bound

conjugate is then washed to remove unbound enzyme. Thereafter the conjugate is eluted from the stationary phase and recovered in a form substantially free of the unconjugated enzyme.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

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                  alerts (SDIs) affected
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 NEWS  16 JAN 03  No connect-hour charges in EPFULL during January and
                  February 2005
 NEWS  17 JAN 26  CA/CAPLUS - Expanded patent coverage to include the Russian
                  Agency for Patents and Trademarks (ROSPATENT)

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=> s ion chelate resin
  24 FILES SEARCHED...
  43 FILES SEARCHED...
  59 FILES SEARCHED...
  71 FILES SEARCHED...
L1          65 ION CHELATE RESIN

=> s immobilized metal ion
  23 FILES SEARCHED...
  40 FILES SEARCHED...
  59 FILES SEARCHED...
  65 FILES SEARCHED...
L2        4567 IMMOBILIZED METAL ION
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=> s L1 and L2
  48 FILES SEARCHED...
L3          21 L1 AND L2

=> d L3 ibib,abs

L3    ANSWER 1 OF 21  BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN
ACCESSION NUMBER: 2004-23595  BIOTECHDS
TITLE:            Purification of fusion protein comprising metal ion affinity
                  peptide, by contacting sample comprising fusion protein with
                  different metal ion chelate
                  resins with respective immobilized
                  metal ion;
                     fusion protein purification using metal ion
                     chelate resin
AUTHOR:           TCHAGA G S; JOKHADZE G G
PATENT ASSIGNEE:  TCHAGA G S; JOKHADZE G G
PATENT INFO:      US 2004180415 16 Sep 2004
APPLICATION INFO: US 2004-762588 21 Jan 2004
PRIORITY INFO:    US 2004-762588 21 Jan 2004; US 2001-858332 15 May 2001
DOCUMENT TYPE:    Patent
LANGUAGE:         English
OTHER SOURCE:     WPI: 2004-675606 [66]
AN    2004-23595  BIOTECHDS
AB    DERWENT ABSTRACT:
      NOVELTY - A fusion protein is purified by contacting a sample comprising
      fusion protein comprising a metal ion affinity peptide with first metal
      ion chelate resin; eluting bound fusion
      protein to produce a first eluate; contacting the first eluate with a
      second metal ion affinity resin; and eluting bound fusion protein to
      produce a product eluate comprising a purified fusion protein. The
      chelate resins respectively comprise immobilized metal
      ion.
           DETAILED DESCRIPTION - A fusion protein is purified by contacting a
      sample comprising fusion protein having metal ion affinity peptide with
      first metal ion chelate resin; eluting
      bound fusion protein from the resin to produce a first eluate; contacting
      the first eluate with a second metal ion affinity resin; and eluting
      bound fusion protein from the resins to produce a product eluate
      comprising a purified fusion protein. The chelate resins respectively
      comprise immobilized metal ion. An
      INDEPENDENT CLAIM is also included for a kit for purifying protein
      comprising first and second metal ion chelate
      resins with respective immobilized metal
      ion.
           USE - For purifying a fusion protein having metal ion affinity
      peptide.
           ADVANTAGE - The use of two different metal ions for purification of
      protein tagged with a single metal ion affinity peptide provides high
      degree of purification with a single chromatographic step.
           EXAMPLE - A sonicate containing a fusion protein (e.g. HAT-GFPuv or
      HAT- DHFR) having a metal ion affinity peptide was loaded on a first
      column. The first column contained a first metal ion
      chelate resin having a Co2+ ion (Co-TALONTM). The first
      column was washed (first with equilibration buffer, then with 5 mM
      imidazole), and eluted with a buffer (pH 5.5). The eluate was applied to
      a second column. The second column contained a second metal ion
      chelate resin having Fe3+ ion (Fe-TALONTM). The second
      column was washed (first with a pH 5.5 wash solution, then with a pH 7.3
      wash solution), and eluted with phosphate. The eluate from Co-TALON was 4
      ml having protein content of 0.34 mg/ml, and the eluate from Fe-TALON was
      4 ml having protein content of 0.15 mg/ml. (20 pages)
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     FILE 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, ANTE, AQUALINE,
     AQUASCI, BIOBUSINESS, BIOCOMMERCE, BIOENG, BIOSIS, BIOTECHDS, BIOTECHNO,
     CABA, CANCERLIT, CAPLUS, CEABA-VTB, CEN, CIN, CONFSCI, CROPB, CROPU,
     DDFB, DGENE, DISSABS, DRUGB, DRUGMONOG2, ...' ENTERED AT 10:39:47 ON 09
     FEB 2005
L1           65 S ION CHELATE RESIN
L2         4567 S IMMOBILIZED METAL ION
L3           21 S L1 AND L2

=> d L3 2-21 ibib,abs

L3    ANSWER 2 OF 21  BIOTECHDS COPYRIGHT 2005 THE THOMSON CORP. on STN
ACCESSION NUMBER: 2003-14436  BIOTECHDS
TITLE:            New metal ion affinity peptide useful, when fused to a fusion
                  partner polypeptide, for protein purification methods and to
                  study protein-protein interactions and nucleic acid-protein
                  interactions;
                     vector-mediated gene transfer and expression in host cell
                     for recombinant protein production and high throughput
                     screening
AUTHOR:           TCHAGA G S; JOKHADZE G G
PATENT ASSIGNEE:  TCHAGA G S; JOKHADZE G G
PATENT INFO:      US 2002164718 7 Nov 2002
APPLICATION INFO: US 2001-858332 15 May 2001
PRIORITY INFO:    US 2001-858332 15 May 2001; US 1998-101867 25 Sep 1998
DOCUMENT TYPE:    Patent
LANGUAGE:         English
OTHER SOURCE:     WPI: 2003-361747 [34]
AN    2003-14436  BIOTECHDS
AB    DERWENT ABSTRACT:
      NOVELTY - A metal ion affinity peptide (I), is new.
           DETAILED DESCRIPTION - A new metal ion affinity peptide (I) consists
      of formula 1,2 (His-X1-X2)n1-(His-X3-X4-X5)n2-(His-X6)n3   (1) X1 and X2
      = independently an amino acid with an aliphatic or an amide side chain;
      X1 and X2 = independently an amino acid with an aliphatic or an amide
      side chain; X3, X4 and X5 = independently an amino acid with a basic side
      chain (except His) or an acidic side chain; X6 = an amino acid with an
      aliphatic or an amide side chain; n1 and n2 = independently 1 - 3; and n3
      = 1 - 5; (His-Asn)n   (2) n = 3 - 10 (His-X1-X2)n   (3) X1 and X2 = an
      amino acid having an acidic side chain; and n = 3 - 10. INDEPENDENT
      CLAIMS are also included for the following: (1) a fusion protein
      comprising a polypeptide fused at its amino- or carboxy-terminus to (I);
      (2) an isolated polynucleotide (II) comprising a nucleotide sequence
      encoding (I); (3) a recombinant vector (III) comprising (II); (4) a
      recombinant host cell comprising (III); and (5) a kit for purifying a
      protein, comprising (III) and a metal ion affinity resin.
           BIOTECHNOLOGY - Preferred Polynucleotide: (II) comprises a
      nucleotide sequence that encodes a fusion protein comprising a
      polypeptide fused at its amino- or carboxy-terminus to (I). Preferred
      Kit: The kit further comprises an extraction buffer, wash buffer and an
      elution buffer, and a column. Preparation: No specific preparative
      details are given.
           USE - The metal ion affinity peptide in a fusion protein allows
      purification of the fusion protein on a metal chelating resin. The method
      involves contacting a sample comprising a fusion protein with a metal
      ion chelate resin comprising a first metal
      ion, preferably a hard metal ion such as Fe3+, Ca2+ and Al3+ and eluting
      any resultant bound fusion protein from the resin. The resin comprises an
      immobilized Co2+ ion. The method further comprises contacting the sample
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with a second **immobilized metal ion** affinity resin comprising a second **immobilized metal ion** and eluting any resultant bound fusion protein from the first and second resins. The second metal ion is an intermediate metal ion such as Cu2+, Ni2+, Zn2+ and Co2+ (claimed). The metal ion affinity peptide-tagged recombinant proteins are useful for the study of protein-protein interactions and nucleic acid molecule-protein interactions, using solid phase **immobilized metal ion** affinity chromatography (IMAC). They are also useful in high throughput systems which find use in massive parallel gene expression experiments, e.g. to determine the effect of an agent on synthesis of a protein or set of proteins, to analyze developmental stage-specific, or tissue-specific synthesis of a protein and to analyze the phosphorylation state of a protein. These methods find use in applications to characterize a protein of unknown identity or function, and in enzymatic reactions.

EXAMPLE - An affinity peptide/green fluorescent protein (GFP) fusion protein was isolated from Escherichia coli cells which had been transformed with the pHAT-GFPuv vector. Cell paste (0.39 g) was transferred to pre-cooled mortar, 1.2 g of alumina was added, and the mixture was ground for 2 minutes. Extraction buffer (5 ml, stored at 4degreesC) was added, after additional grinding for 2 minutes, the mixture was transferred into four eppendorph tubes. The suspension was added to the eppendorph tubes and centrifuged for 12 minutes at 12000 rotations per minute (rpm) (11750 x g). The clear supernatant was used as a starting sample for **immobilized metal ion** affinity chromatography (IMAC). The extraction and chromatography equilibration buffers contained 20 mM sodium phosphate buffer containing 1.0 M sodium chloride and 5 mM imidazole pH 7.0 (1 L). The elution buffer for IMAC consisted of 20 mM sodium phosphate buffer containing 1.0, M sodium chloride and 150 mM imidazole pH 7.0. Purification of the fusion protein on Co2+-TALON Superflow 6 was carried out by first equilibrating the IMAC column with 5 - 10 column volumes of the equilibration buffer. The sample was loaded on the IMAC column at a flow rate of 1.0 ml per min, and 1 ml fractions were collected. The column was washed with the equilibration buffer until a baseline was reached. The adsorbed material was then eluted with elution buffer. Absorbance of each fraction at 280 nm was determined on a spectrophotometer, and protein content of each fraction also was determined. Fluorescence of each fraction was determined on a microplate reader, and the purity of the fusion protein was determined also by sodium dodecyl sulfate (SDS)-electrophoresis. Results showed that more than 95 % of the fusion protein was recovered in the fractions obtained. (23 pages)

L3 ANSWER 3 OF 21 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:759732 CAPLUS
DOCUMENT NUMBER: 141:273989
TITLE: Purification of fusion proteins using immobilized bi-metal affinity chromatography
INVENTOR(S): Tchaga, Grigoriy S.; Jokhadze, George G.
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 20 pp., Cont.-in-part of U.S. Pat. Appl. 2002 164,718.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004180415	A1	20040916	US 2004-762588	20040121
US 2002164718	A1	20021107	US 2001-858332	20010515
PRIORITY APPLN. INFO.:			US 2001-858332 A2	20010515

US 2003-441804P P 20030121
US 1998-101867P P 19980925
US 1999-404017 B2 19990923

AB The present invention relates to IMAC (Immobilized Metal Affinity Chromatog.). The present invention provides methods of purifying proteins that include a metal ion affinity peptide. The methods generally involve contacting a fusion protein that includes a metal ion affinity peptide with at least two different metal ion chelating resins. In certain representative embodiments, the methods include contacting a fusion protein with a first metal **ion chelate resin** having a first **immobilized metal ion**; eluting any bound protein from the first metal **ion chelate resin**, to produce an eluate; contacting the eluate with a second metal **ion chelate resin** having a second **immobilized metal ion**; and eluting any bound protein from the second metal **ion chelate resin**. Also provided are kits for use in practicing the subject methods. An illustrative purification protocol for Bi-MAC (Bi-Metal Affinity Chromatog.) is shown. The subject methods find use in a variety of protein purification applications.

L3 ANSWER 4 OF 21 DGENE COPYRIGHT 2005 The Thomson Corp on STN
ACCESSION NUMBER: ADR70442 peptide DGENE
TITLE: Purification of fusion protein comprising metal ion affinity peptide, by contacting sample comprising fusion protein with different metal **ion chelate resins** with respective **immobilized metal ion**.
INVENTOR: Tchaga G S; Jokhadze G G
PATENT ASSIGNEE: (TCHA-I) TCHAGA G S.
(JOKH-I) JOKHADZE G G.
PATENT INFO: US 2004180415 A1 20040916 20p
APPLICATION INFO: US 2004-762588 20040121
PRIORITY INFO: US 2001-858332 20010515
US 2003-441804P 20030121
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2004-675606 [66]
DESCRIPTION: Metal ion affinity peptide seqid 5.
AN ADR70442 peptide DGENE
AB The invention describes a fusion protein purified by contacting a sample comprising fusion protein comprising a metal ion affinity peptide with first metal **ion chelate resin**; eluting bound fusion protein to produce a first eluate; contacting the first eluate with a second metal ion affinity resin; and eluting bound fusion protein to produce a product eluate comprising a purified fusion protein. The chelate resins respectively comprise immobilised metal ion. A fusion protein is purified by contacting a sample comprising fusion protein having metal ion affinity peptide with first metal **ion chelate resin**; eluting bound fusion protein from the resin to produce a first eluate; contacting the first eluate with a second metal ion affinity resin; and eluting bound fusion protein from the resins to produce a product eluate comprising a purified fusion protein. The chelate resins respectively comprise immobilised metal ion. Also described is a kit for purifying protein comprising first and second metal **ion chelate resins** with respective immobilised metal ion. The method is useful for purifying a fusion protein having metal ion affinity peptide. The use of two different metal ions for purification of protein tagged with a single metal ion affinity peptide provides high degree of purification with a single chromatographic step. This is the amino acid sequence of a metal ion affinity peptide that can be used in the creation of fusion proteins of the invention.

L3 ANSWER 5 OF 21 DGENE COPYRIGHT 2005 The Thomson Corp on STN
ACCESSION NUMBER: ADR70447 peptide DGENE
TITLE: Purification of fusion protein comprising metal ion affinity peptide, by contacting sample comprising fusion protein with different metal **ion chelate resins** with respective **immobilized metal ion**.
INVENTOR: Tchaga G S; Jokhadze G G
PATENT ASSIGNEE: (TCHA-I) TCHAGA G S.
(JOKH-I) JOKHADZE G G.
PATENT INFO: US 2004180415 A1 20040916 20p
APPLICATION INFO: US 2004-762588 20040121
PRIORITY INFO: US 2001-858332 20010515
US 2003-441804P 20030121
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2004-675606 [66]
DESCRIPTION: FLAG tag.
AN ADR70447 peptide DGENE
AB The invention describes a fusion protein purified by contacting a sample comprising fusion protein comprising a metal ion affinity peptide with first metal **ion chelate resin**; eluting bound fusion protein to produce a first eluate; contacting the first eluate with a second metal ion affinity resin; and eluting bound fusion protein to produce a product eluate comprising a purified fusion protein. The chelate resins respectively comprise immobilised metal ion. A fusion protein is purified by contacting a sample comprising fusion protein having metal ion affinity peptide with first metal **ion chelate resin**; eluting bound fusion protein from the resin to produce a first eluate; contacting the first eluate with a second metal ion affinity resin; and eluting bound fusion protein from the resins to produce a product eluate comprising a purified fusion protein. The chelate resins respectively comprise immobilised metal ion. Also described is a kit for purifying protein comprising first and second metal **ion chelate resins** with respective immobilised metal ion. The method is useful for purifying a fusion protein having metal ion affinity peptide. The use of two different metal ions for purification of protein tagged with a single metal ion affinity peptide provides high degree of purification with a single chromatographic step. This is the amino acid sequence of a FLAG tag that can be used in the creation of fusion proteins of the invention.

L3 ANSWER 6 OF 21 DGENE COPYRIGHT 2005 The Thomson Corp on STN
ACCESSION NUMBER: ADR70448 peptide DGENE
TITLE: Purification of fusion protein comprising metal ion affinity peptide, by contacting sample comprising fusion protein with different metal **ion chelate resins** with respective **immobilized metal ion**.
INVENTOR: Tchaga G S; Jokhadze G G
PATENT ASSIGNEE: (TCHA-I) TCHAGA G S.
(JOKH-I) JOKHADZE G G.
PATENT INFO: US 2004180415 A1 20040916 20p
APPLICATION INFO: US 2004-762588 20040121
PRIORITY INFO: US 2001-858332 20010515
US 2003-441804P 20030121
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2004-675606 [66]
DESCRIPTION: Human c-myc tag.
AN ADR70448 peptide DGENE
AB The invention describes a fusion protein purified by contacting a sample comprising fusion protein comprising a metal ion affinity peptide with first metal **ion chelate resin**; eluting

bound fusion protein to produce a first eluate; contacting the first eluate with a second metal ion affinity resin; and eluting bound fusion protein to produce a product eluate comprising a purified fusion protein. The chelate resins respectively comprise immobilised metal ion. A fusion protein is purified by contacting a sample comprising fusion protein having metal ion affinity peptide with first metal **ion chelate resin**; eluting bound fusion protein from the resin to produce a first eluate; contacting the first eluate with a second metal ion affinity resin; and eluting bound fusion protein from the resins to produce a product eluate comprising a purified fusion protein. The chelate resins respectively comprise immobilised metal ion. Also described is a kit for purifying protein comprising first and second metal **ion chelate resins** with respective immobilised metal ion. The method is useful for purifying a fusion protein having metal ion affinity peptide. The use of two different metal ions for purification of protein tagged with a single metal ion affinity peptide provides high degree of purification with a single chromatographic step. This is the amino acid sequence of a human c-myc tag that can be used in the creation of fusion proteins of the invention.

L3 ANSWER 7 OF 21 DGENE COPYRIGHT 2005 The Thomson Corp on STN
ACCESSION NUMBER: ADR70445 peptide DGENE
TITLE: Purification of fusion protein comprising metal ion affinity peptide, by contacting sample comprising fusion protein with different metal **ion chelate resins** with respective **immobilized metal ion**.
INVENTOR: Tchaga G S; Jokhadze G G
PATENT ASSIGNEE: (TCHA-I) TCHAGA G S.
(JOKH-I) JOKHADZE G G.
PATENT INFO: US 2004180415 A1 20040916 20p
APPLICATION INFO: US 2004-762588 20040121
PRIORITY INFO: US 2001-858332 20010515
US 2003-441804P 20030121
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2004-675606 [66]
DESCRIPTION: Human renin cleavage site.
AN ADR70445 peptide DGENE
AB The invention describes a fusion protein purified by contacting a sample comprising fusion protein comprising a metal ion affinity peptide with first metal **ion chelate resin**; eluting bound fusion protein to produce a first eluate; contacting the first eluate with a second metal ion affinity resin; and eluting bound fusion protein to produce a product eluate comprising a purified fusion protein. The chelate resins respectively comprise immobilised metal ion. A fusion protein is purified by contacting a sample comprising fusion protein having metal ion affinity peptide with first metal **ion chelate resin**; eluting bound fusion protein from the resin to produce a first eluate; contacting the first eluate with a second metal ion affinity resin; and eluting bound fusion protein from the resins to produce a product eluate comprising a purified fusion protein. The chelate resins respectively comprise immobilised metal ion. Also described is a kit for purifying protein comprising first and second metal **ion chelate resins** with respective immobilised metal ion. The method is useful for purifying a fusion protein having metal ion affinity peptide. The use of two different metal ions for purification of protein tagged with a single metal ion affinity peptide provides high degree of purification with a single chromatographic step. This is the amino acid sequence of a human renin cleavage site that can be used in the creation of fusion proteins of the invention.

L3 ANSWER 8 OF 21 DGENE COPYRIGHT 2005 The Thomson Corp on STN

ACCESSION NUMBER: ADR70438 peptide DGENE
TITLE: Purification of fusion protein comprising metal ion affinity peptide, by contacting sample comprising fusion protein with different metal **ion chelate resins** with respective **immobilized metal ion**.
INVENTOR: Tchaga G S; Jokhadze G G
PATENT ASSIGNEE: (TCHA-I) TCHAGA G S.
(JOKH-I) JOKHADZE G G.
PATENT INFO: US 2004180415 A1 20040916 20p
APPLICATION INFO: US 2004-762588 20040121
PRIORITY INFO: US 2001-858332 20010515
US 2003-441804P 20030121
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2004-675606 [66]
DESCRIPTION: Metal ion affinity peptide seqid 1.
AN ADR70438 peptide DGENE
AB The invention describes a fusion protein purified by contacting a sample comprising fusion protein comprising a metal ion affinity peptide with first metal **ion chelate resin**; eluting bound fusion protein to produce a first eluate; contacting the first eluate with a second metal ion affinity resin; and eluting bound fusion protein to produce a product eluate comprising a purified fusion protein. The chelate resins respectively comprise immobilised metal ion. A fusion protein is purified by contacting a sample comprising fusion protein having metal ion affinity peptide with first metal **ion chelate resin**; eluting bound fusion protein from the resin to produce a first eluate; contacting the first eluate with a second metal ion affinity resin; and eluting bound fusion protein from the resins to produce a product eluate comprising a purified fusion protein. The chelate resins respectively comprise immobilised metal ion. Also described is a kit for purifying protein comprising first and second metal **ion chelate resins** with respective immobilised metal ion. The method is useful for purifying a fusion protein having metal ion affinity peptide. The use of two different metal ions for purification of protein tagged with a single metal ion affinity peptide provides high degree of purification with a single chromatographic step. This is the amino acid sequence of a metal ion affinity peptide that can be used in the creation of fusion proteins of the invention.

L3 ANSWER 9 OF 21 DGENE COPYRIGHT 2005 The Thomson Corp on STN
ACCESSION NUMBER: ADR70441 peptide DGENE
TITLE: Purification of fusion protein comprising metal ion affinity peptide, by contacting sample comprising fusion protein with different metal **ion chelate resins** with respective **immobilized metal ion**.
INVENTOR: Tchaga G S; Jokhadze G G
PATENT ASSIGNEE: (TCHA-I) TCHAGA G S.
(JOKH-I) JOKHADZE G G.
PATENT INFO: US 2004180415 A1 20040916 20p
APPLICATION INFO: US 2004-762588 20040121
PRIORITY INFO: US 2001-858332 20010515
US 2003-441804P 20030121
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2004-675606 [66]
DESCRIPTION: Metal ion affinity peptide seqid 4.
AN ADR70441 peptide DGENE
AB The invention describes a fusion protein purified by contacting a sample comprising fusion protein comprising a metal ion affinity peptide with first metal **ion chelate resin**; eluting

bound fusion protein to produce a first eluate; contacting the first eluate with a second metal ion affinity resin; and eluting bound fusion protein to produce a product eluate comprising a purified fusion protein. The chelate resins respectively comprise immobilised metal ion. A fusion protein is purified by contacting a sample comprising fusion protein having metal ion affinity peptide with first metal **ion chelate resin**; eluting bound fusion protein from the resin to produce a first eluate; contacting the first eluate with a second metal ion affinity resin; and eluting bound fusion protein from the resins to produce a product eluate comprising a purified fusion protein. The chelate resins respectively comprise immobilised metal ion. Also described is a kit for purifying protein comprising first and second metal **ion chelate resins** with respective immobilised metal ion. The method is useful for purifying a fusion protein having metal ion affinity peptide. The use of two different metal ions for purification of protein tagged with a single metal ion affinity peptide provides high degree of purification with a single chromatographic step. This is the amino acid sequence of a metal ion affinity peptide that can be used in the creation of fusion proteins of the invention.

L3 ANSWER 10 OF 21 DGENE COPYRIGHT 2005 The Thomson Corp on STN
ACCESSION NUMBER: ADR70443 peptide DGENE
TITLE: Purification of fusion protein comprising metal ion affinity peptide, by contacting sample comprising fusion protein with different metal **ion chelate resins** with respective **immobilized metal ion**.
INVENTOR: Tchaga G S; Jokhadze G G
PATENT ASSIGNEE: (TCHA-I) TCHAGA G S.
(JOKH-I) JOKHADZE G G.
PATENT INFO: US 20041804<u>15 A1</u> 20040916 20p
APPLICATION INFO: US 2004-762588 20040121
PRIORITY INFO: US 2001-858332 20010515
US 2003-441804P 20030121
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2004-675606 [66]
DESCRIPTION: Human factor Xa cleavage site.
AN ADR70443 peptide DGENE
AB The invention describes a fusion protein purified by contacting a sample comprising fusion protein comprising a metal ion affinity peptide with first metal **ion chelate resin**; eluting bound fusion protein to produce a first eluate; contacting the first eluate with a second metal ion affinity resin; and eluting bound fusion protein to produce a product eluate comprising a purified fusion protein. The chelate resins respectively comprise immobilised metal ion. A fusion protein is purified by contacting a sample comprising fusion protein having metal ion affinity peptide with first metal **ion chelate resin**; eluting bound fusion protein from the resin to produce a first eluate; contacting the first eluate with a second metal ion affinity resin; and eluting bound fusion protein from the resins to produce a product eluate comprising a purified fusion protein. The chelate resins respectively comprise immobilised metal ion. Also described is a kit for purifying protein comprising first and second metal **ion chelate resins** with respective immobilised metal ion. The method is useful for purifying a fusion protein having metal ion affinity peptide. The use of two different metal ions for purification of protein tagged with a single metal ion affinity peptide provides high degree of purification with a single chromatographic step. This is the amino acid sequence of a human factor Xa cleavage site that can be used in the creation of fusion proteins of the invention.

L3 ANSWER 11 OF 21 DGENE COPYRIGHT 2005 The Thomson Corp on STN
ACCESSION NUMBER: ADR70439 peptide DGENE
TITLE: Purification of fusion protein comprising metal ion affinity peptide, by contacting sample comprising fusion protein with different metal **ion chelate resins** with respective **immobilized metal ion**.
INVENTOR: Tchaga G S; Jokhadze G G
PATENT ASSIGNEE: (TCHA-I) TCHAGA G S.
(JOKH-I) JOKHADZE G G.
PATENT INFO: US 2004180415 A1 20040916 20p
APPLICATION INFO: US 2004-762588 20040121
PRIORITY INFO: US 2001-858332 20010515
US 2003-441804P 20030121
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2004-675606 [66]
DESCRIPTION: Metal ion affinity peptide seqid 2.
AN ADR70439 peptide DGENE
AB The invention describes a fusion protein purified by contacting a sample comprising fusion protein comprising a metal ion affinity peptide with first metal **ion chelate resin**; eluting bound fusion protein to produce a first eluate; contacting the first eluate with a second metal ion affinity resin; and eluting bound fusion protein to produce a product eluate comprising a purified fusion protein. The chelate resins respectively comprise immobilised metal ion. A fusion protein is purified by contacting a sample comprising fusion protein having metal ion affinity peptide with first metal **ion chelate resin**; eluting bound fusion protein from the resin to produce a first eluate; contacting the first eluate with a second metal ion affinity resin; and eluting bound fusion protein from the resins to produce a product eluate comprising a purified fusion protein. The chelate resins respectively comprise immobilised metal ion. Also described is a kit for purifying protein comprising first and second metal **ion chelate resins** with respective immobilised metal ion. The method is useful for purifying a fusion protein having metal ion affinity peptide. The use of two different metal ions for purification of protein tagged with a single metal ion affinity peptide provides high degree of purification with a single chromatographic step. This is the amino acid sequence of a metal ion affinity peptide that can be used in the creation of fusion proteins of the invention.

L3 ANSWER 12 OF 21 DGENE COPYRIGHT 2005 The Thomson Corp on STN
ACCESSION NUMBER: ADR70449 peptide DGENE
TITLE: Purification of fusion protein comprising metal ion affinity peptide, by contacting sample comprising fusion protein with different metal **ion chelate resins** with respective **immobilized metal ion**.
INVENTOR: Tchaga G S; Jokhadze G G
PATENT ASSIGNEE: (TCHA-I) TCHAGA G S.
(JOKH-I) JOKHADZE G G.
PATENT INFO: US 2004180415 A1 20040916 20p
APPLICATION INFO: US 2004-762588 20040121
PRIORITY INFO: US 2001-858332 20010515
US 2003-441804P 20030121
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2004-675606 [66]
DESCRIPTION: Human enterokinase cleavage site.
AN ADR70449 peptide DGENE
AB The invention describes a fusion protein purified by contacting a sample comprising fusion protein comprising a metal ion affinity peptide with

first metal **ion chelate resin**; eluting bound fusion protein to produce a first eluate; contacting the first eluate with a second metal ion affinity resin; and eluting bound fusion protein to produce a product eluate comprising a purified fusion protein. The chelate resins respectively comprise immobilised metal ion. A fusion protein is purified by contacting a sample comprising fusion protein having metal ion affinity peptide with first metal **ion chelate resin**; eluting bound fusion protein from the resin to produce a first eluate; contacting the first eluate with a second metal ion affinity resin; and eluting bound fusion protein from the resins to produce a product eluate comprising a purified fusion protein. The chelate resins respectively comprise immobilised metal ion. Also described is a kit for purifying protein comprising first and second metal **ion chelate resins** with respective immobilised metal ion. The method is useful for purifying a fusion protein having metal ion affinity peptide. The use of two different metal ions for purification of protein tagged with a single metal ion affinity peptide provides high degree of purification with a single chromatographic step. This is the amino acid sequence of a human enterokinase cleavage site that can be used in the creation of fusion proteins of the invention.

L3 ANSWER 13 OF 21 DGENE COPYRIGHT 2005 The Thomson Corp on STN
ACCESSION NUMBER: ADR70446 peptide DGENE
TITLE: Purification of fusion protein comprising metal ion affinity peptide, by contacting sample comprising fusion protein with different metal **ion chelate resins** with respective **immobilized metal ion**.
INVENTOR: Tchaga G S; Jokhadze G G
PATENT ASSIGNEE: (TCHA-I) TCHAGA G S.
(JOKH-I) JOKHADZE G G.
PATENT INFO: US 2004180415 A1 20040916 20p
APPLICATION INFO: US 2004-762588 20040121
PRIORITY INFO: US 2001-858332 20010515
US 2003-441804P 20030121
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2004-675606 [66]
DESCRIPTION: Haemagglutinin tag.
AN ADR70446 peptide DGENE
AB The invention describes a fusion protein purified by contacting a sample comprising fusion protein comprising a metal ion affinity peptide with first metal **ion chelate resin**; eluting bound fusion protein to produce a first eluate; contacting the first eluate with a second metal ion affinity resin; and eluting bound fusion protein to produce a product eluate comprising a purified fusion protein. The chelate resins respectively comprise immobilised metal ion. A fusion protein is purified by contacting a sample comprising fusion protein having metal ion affinity peptide with first metal **ion chelate resin**; eluting bound fusion protein from the resin to produce a first eluate; contacting the first eluate with a second metal ion affinity resin; and eluting bound fusion protein from the resins to produce a product eluate comprising a purified fusion protein. The chelate resins respectively comprise immobilised metal ion. Also described is a kit for purifying protein comprising first and second metal **ion chelate resins** with respective immobilised metal ion. The method is useful for purifying a fusion protein having metal ion affinity peptide. The use of two different metal ions for purification of protein tagged with a single metal ion affinity peptide provides high degree of purification with a single chromatographic step. This is the amino acid sequence of a haemagglutinin tag that can be used in the creation of fusion proteins of the invention.

L3 ANSWER 14 OF 21 DGENE COPYRIGHT 2005 The Thomson Corp on STN
ACCESSION NUMBER: ADR70440 peptide DGENE
TITLE: Purification of fusion protein comprising metal ion affinity peptide, by contacting sample comprising fusion protein with different metal **ion chelate resins** with respective **immobilized metal ion**.
INVENTOR: Tchaga G S; Jokhadze G G
PATENT ASSIGNEE: (TCHA-I) TCHAGA G S.
(JOKH-I) JOKHADZE G G.
PATENT INFO: US 2004180415 A1 20040916 20p
APPLICATION INFO: US 2004-762588 20040121
PRIORITY INFO: US 2001-858332 20010515
US 2003-441804P 20030121
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2004-675606 [66]
DESCRIPTION: Metal ion affinity peptide seqid 3.
AN ADR70440 peptide DGENE
AB The invention describes a fusion protein purified by contacting a sample comprising fusion protein comprising a metal ion affinity peptide with first metal **ion chelate resin**; eluting bound fusion protein to produce a first eluate; contacting the first eluate with a second metal ion affinity resin; and eluting bound fusion protein to produce a product eluate comprising a purified fusion protein. The chelate resins respectively comprise immobilised metal ion. A fusion protein is purified by contacting a sample comprising fusion protein having metal ion affinity peptide with first metal **ion chelate resin**; eluting bound fusion protein from the resin to produce a first eluate; contacting the first eluate with a second metal ion affinity resin; and eluting bound fusion protein from the resins to produce a product eluate comprising a purified fusion protein. The chelate resins respectively comprise immobilised metal ion. Also described is a kit for purifying protein comprising first and second metal **ion chelate resins** with respective immobilised metal ion. The method is useful for purifying a fusion protein having metal ion affinity peptide. The use of two different metal ions for purification of protein tagged with a single metal ion affinity peptide provides high degree of purification with a single chromatographic step. This is the amino acid sequence of a metal ion affinity peptide that can be used in the creation of fusion proteins of the invention.

L3 ANSWER 15 OF 21 DGENE COPYRIGHT 2005 The Thomson Corp on STN
ACCESSION NUMBER: ADR70444 peptide DGENE
TITLE: Purification of fusion protein comprising metal ion affinity peptide, by contacting sample comprising fusion protein with different metal **ion chelate resins** with respective **immobilized metal ion**.
INVENTOR: Tchaga G S; Jokhadze G G
PATENT ASSIGNEE: (TCHA-I) TCHAGA G S.
(JOKH-I) JOKHADZE G G.
PATENT INFO: US 2004180415 A1 20040916 20p
APPLICATION INFO: US 2004-762588 20040121
PRIORITY INFO: US 2001-858332 20010515
US 2003-441804P 20030121
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2004-675606 [66]
DESCRIPTION: Human thrombin cleavage site.
AN ADR70444 peptide DGENE
AB The invention describes a fusion protein purified by contacting a sample

comprising fusion protein comprising a metal ion affinity peptide with first metal **ion chelate resin**; eluting bound fusion protein to produce a first eluate; contacting the first eluate with a second metal ion affinity resin; and eluting bound fusion protein to produce a product eluate comprising a purified fusion protein. The chelate resins respectively comprise immobilised metal ion. A fusion protein is purified by contacting a sample comprising fusion protein having metal ion affinity peptide with first metal **ion chelate resin**; eluting bound fusion protein from the resin to produce a first eluate; contacting the first eluate with a second metal ion affinity resin; and eluting bound fusion protein from the resins to produce a product eluate comprising a purified fusion protein. The chelate resins respectively comprise immobilised metal ion. Also described is a kit for purifying protein comprising first and second metal **ion chelate resins** with respective immobilised metal ion. The method is useful for purifying a fusion protein having metal ion affinity peptide. The use of two different metal ions for purification of protein tagged with a single metal ion affinity peptide provides high degree of purification with a single chromatographic step. This is the amino acid sequence of a human thrombin cleavage site that can be used in the creation of fusion proteins of the invention.

L3 ANSWER 16 OF 21 IFIPAT COPYRIGHT 2005 IFI on STN

AN	10673176 IFIPAT;IFIUDB;IFICDB		
TITLE:	METHODS AND COMPOSITIONS FOR PROTEIN PURIFICATION		
INVENTOR(S):	Jokhadze; George G., Mountain View, CA, US Tchaga; Grigoriy S., Newark, CA, US		
PATENT ASSIGNEE(S):	Unassigned		
AGENT:	BOZICEVIC, FIELD & FRANCIS (BD BIOSCIENCES), 200 MIDDLEFIELD ROAD, SUITE 200, MENLO PARK, CA, 94025, US		

	NUMBER	PK	DATE
PATENT INFORMATION:	US 2004180415	A1	20040916
APPLICATION INFORMATION:	US 2004-762588		20040121

	APPLN. NUMBER	DATE	GRANTED PATENT NO. OR STATUS
CONTINUATION-IN-PART OF:	US 2001-858332	20010515	PENDING

	NUMBER	DATE	
PRIORITY APPLN. INFO.:	US 2003-441804P	20030121	(Provisional)
FAMILY INFORMATION:	US 2004180415	20040916	
DOCUMENT TYPE:	Utility Patent Application - First Publication		
FILE SEGMENT:	CHEMICAL APPLICATION		

PARENT CASE DATA:

This application is a continuation-in-part of U.S. patent application Ser. No. 09/858,332, filed May 15, 2001, which application is incorporated herein by reference in its entirety. This application also claims the benefit of U.S. Provisional Patent Application No. 60/441,804, filed Jan. 21, 2003; which application is incorporated herein by reference in its entirety.

NUMBER OF CLAIMS: 17 2 Figure(s).
DESCRIPTION OF FIGURES:
FIG. 1 depicts an exemplary protein purification scheme.
FIG. 2 depicts gel electrophoresis analysis of various fractions from the

purification scheme described in Example 1 and shown in FIG. 1.

AB The present invention provides methods of purifying proteins that include a metal ion affinity peptide. The methods generally involve contacting a fusion protein that includes a metal ion affinity peptide with at least two different metal ion chelating resins. In certain representative embodiments, the methods include contacting a fusion protein with a first metal **ion chelate resin** having a first **immobilized metal ion**; eluting any bound protein from the first metal **ion chelate resin**, to produce an eluate; contacting the eluate with a second metal **ion chelate resin** having a second **immobilized metal ion**; and eluting any bound protein from the second metal **ion chelate resin**. Also provided are kits for use in practicing the subject methods. The subject methods find use in a variety of protein purification applications.

CLMN 17 2 Figure(s).

FIG. 1 depicts an exemplary protein purification scheme.

FIG. 2 depicts gel electrophoresis analysis of various fractions from the purification scheme described in Example 1 and shown in FIG. 1.

L3 ANSWER 17 OF 21 IFIPAT COPYRIGHT 2005 IFI on STN

AN	10221011 IFIPAT;IFIUDB;IFICDB
TITLE:	METAL ION AFFINITY TAGS AND METHODS FOR USIG THE SAME; METAL PEPTIDE FOR USE AS TOOL IN THE SEPARATION OF PREFERENTIAL PARTICLES
INVENTOR(S):	Jokhadze; George G., Mountain View, CA, US Tchaga; Grigoriy S., Newark, CA, US
PATENT ASSIGNEE(S):	Unassigned
AGENT:	BOZICEVIC, FIELD & FRANCIS LLP, 200 MIDDLEFIELD RD, SUITE 200, MENLO PARK, CA, 94025, US

	NUMBER	PK	DATE
PATENT INFORMATION:	US 2002164718	A1	20021107
APPLICATION INFORMATION:	US 2001-858332		20010515

	APPLN. NUMBER	DATE	GRANTED PATENT NO. OR STATUS
CONTINUATION-IN-PART OF:	US 1999-404017	19990923	ABANDONED

	NUMBER	DATE	
PRIORITY APPLN. INFO.:	US 1998-101867P	19980925	(Provisional)
FAMILY INFORMATION:	US 2002164718	20021107	
DOCUMENT TYPE:	Utility Patent Application - First Publication		
FILE SEGMENT:	CHEMICAL APPLICATION		
OTHER SOURCE:	CA 137:363702		
NUMBER OF CLAIMS:	28 5 Figure(s).		

DESCRIPTION OF FIGURES:

FIG. 1 is a schematic presentation of a vector containing the cDNA of recombinant enterokinase fused to an affinity purification peptide.

FIG. 2 is the DNA and amino acid sequence of the vector presented in FIG. 1. The start of translation is denoted by lower case type in the amino acid sequence, the affinity purification peptide is denoted with lower case bolded type in the amino acid sequence, and the enterokinase cDNA is denoted with lowercase bold type in both the DNA and amino acid sequences.

FIG. 3 shows various DNA and amino acid sequence embodiments of the affinity purification site of the present invention.

FIG. 4 illustrates the process for using the recombinant enterokinase-

containing affinity purification peptide of the present invention (denoted as "HAT" for histidine affinity tag) for the production of wildtype proteins from recombinant (HAT) fusion proteins containing the affinity purification peptide. FIG. 5 shows the results of the purification of HAT-DHFR using the Insert 2 embodiment shown in FIG. 3. Peak I is non-adsorbed material. Peak 11 is the HAT-DHFR.

AB The present invention provides metal ion affinity peptides, fusion proteins comprising metal ion affinity peptides, and polynucleotides encoding the fusion proteins. The invention further provides recombinant vectors comprising subject polynucleotides, and host cells comprising the recombinant vectors. The invention further provides methods and kits for purifying a fusion protein comprising a metal ion affinity peptide.

CLMN 28 5 Figure(s).

FIG. 1 is a schematic presentation of a vector containing the cDNA of recombinant enterokinase fused to an affinity purification peptide.

FIG. 2 is the DNA and amino acid sequence of the vector presented in FIG. 1. The start of translation is denoted by lower case type in the amino acid sequence, the affinity purification peptide is denoted with lower case bolded type in the amino acid sequence, and the enterokinase cDNA is denoted with lowercase bold type in both the DNA and amino acid sequences.

FIG. 3 shows various DNA and amino acid sequence embodiments of the affinity purification site of the present invention.

FIG. 4 illustrates the process for using the recombinant enterokinase-containing affinity purification peptide of the present invention (denoted as "HAT" for histidine affinity tag) for the production of wildtype proteins from recombinant (HAT) fusion proteins containing the affinity purification peptide.

FIG. 5 shows the results of the purification of HAT-DHFR using the Insert 2 embodiment shown in FIG. 3. Peak I is non-adsorbed material. Peak 11 is the HAT-DHFR.

L3 ANSWER 18 OF 21 USPATFULL on STN

ACCESSION NUMBER:	2004:233344 USPATFULL
TITLE:	Methods and compositions for protein purification
INVENTOR(S):	Tchaga, Grigoriy S., Newark, CA, UNITED STATES Jokhadze, George G., Mountain View, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2004180415	A1	20040916
APPLICATION INFO.:	US 2004-762588	A1	20040121 (10)
RELATED APPLN. INFO.:	Continuation-in-part of Ser. No. US 2001-858332, filed on 15 May 2001, PENDING		

	NUMBER	DATE
PRIORITY INFORMATION:	US 2003-441804P	20030121 (60)

DOCUMENT TYPE:	Utility
FILE SEGMENT:	APPLICATION
LEGAL REPRESENTATIVE:	BOZICEVIC, FIELD & FRANCIS (BD BIOSCIENCES), 200 MIDDLEFIELD ROAD, SUITE 200, MENLO PARK, CA, 94025
NUMBER OF CLAIMS:	17
EXEMPLARY CLAIM:	1
NUMBER OF DRAWINGS:	2 Drawing Page(s)
LINE COUNT:	1687

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention provides methods of purifying proteins that include a metal ion affinity peptide. The methods generally involve contacting a fusion protein that includes a metal ion affinity peptide with at least two different metal ion chelating resins. In certain representative embodiments, the methods include contacting a fusion protein with a first metal **ion chelate resin** having a first **immobilized metal ion**;

eluting any bound protein from the first metal **ion chelate resin**, to produce an eluate; contacting the eluate with a second metal **ion chelate resin** having a second **immobilized metal ion**; and eluting any bound protein from the second metal **ion chelate resin**. Also provided are kits for use in practicing the subject methods. The subject methods find use in a variety of protein purification applications.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 19 OF 21 USPATFULL on STN

ACCESSION NUMBER:	2002:294675 USPATFULL
TITLE:	Metal ion affinity tags and methods for usig the same
INVENTOR(S):	Tchaga, Grigoriy S., Newark, CA, UNITED STATES Jokhadze, George G., Mountain View, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2002164718	A1	20021107
APPLICATION INFO.:	US 2001-858332	A1	20010515 (9)
RELATED APPLN. INFO.:	Continuation-in-part of Ser. No. US 1999-404017, filed on 23 Sep 1999, ABANDONED		

	NUMBER	DATE
PRIORITY INFORMATION:	US 1998-101867P	19980925 (60)

DOCUMENT TYPE:	Utility
FILE SEGMENT:	APPLICATION
LEGAL REPRESENTATIVE:	BOZICEVIC, FIELD & FRANCIS LLP, 200 MIDDLEFIELD RD, SUITE 200, MENLO PARK, CA, 94025
NUMBER OF CLAIMS:	28
EXEMPLARY CLAIM:	1
NUMBER OF DRAWINGS:	8 Drawing Page(s)
LINE COUNT:	1484

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention provides metal ion affinity peptides, fusion proteins comprising metal ion affinity peptides, and polynucleotides encoding the fusion proteins. The invention further provides recombinant vectors comprising subject polynucleotides, and host cells comprising the recombinant vectors. The invention further provides methods and kits for purifying a fusion protein comprising a metal ion affinity peptide.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 20 OF 21 WPIDS COPYRIGHT 2005 THE THOMSON CORP on STN

ACCESSION NUMBER:	2004-675606 [66] WPIDS
CROSS REFERENCE:	2003-361747 [34]
DOC. NO. CPI:	C2004-240867
TITLE:	Purification of fusion protein comprising metal ion affinity peptide, by contacting sample comprising fusion protein with different metal **ion chelate resins** with respective **immobilized metal ion**.
DERWENT CLASS:	B04
INVENTOR(S):	JOKHADZE, G G; TCHAGA, G S
PATENT ASSIGNEE(S):	(JOKH-I) JOKHADZE G G; (TCHA-I) TCHAGA G S
COUNTRY COUNT:	1

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
US 2004180415	A1	20040916	(200466)*		20

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 2004180415	A1 CIP of Provisional	US 2001-858332	20010515
		US 2003-441804P	20030121
		US 2004-762588	20040121

PRIORITY APPLN. INFO: US 2003-441804P 20030121; US 2001-858332 20010515; US 2004-762588 20040121

AN 2004-675606 [66] WPIDS

CR 2003-361747 [34]

AB US2004180415 A UPAB: 20041015

NOVELTY - A fusion protein is purified by contacting a sample comprising fusion protein comprising a metal ion affinity peptide with first metal **ion chelate resin**; eluting bound fusion protein to produce a first eluate; contacting the first eluate with a second metal ion affinity resin; and eluting bound fusion protein to produce a product eluate comprising a purified fusion protein. The chelate resins respectively comprise **immobilized metal ion**.

DETAILED DESCRIPTION - A fusion protein is purified by contacting a sample comprising fusion protein having metal ion affinity peptide with first metal **ion chelate resin**; eluting bound fusion protein from the resin to produce a first eluate; contacting the first eluate with a second metal ion affinity resin; and eluting bound fusion protein from the resins to produce a product eluate comprising a purified fusion protein. The chelate resins respectively comprise **immobilized metal ion**.

An INDEPENDENT CLAIM is also included for a kit for purifying protein comprising first and second metal **ion chelate resins** with respective **immobilized metal ion**.

USE - For purifying a fusion protein having metal ion affinity peptide.

ADVANTAGE - The use of two different metal ions for purification of protein tagged with a single metal ion affinity peptide provides high degree of purification with a single chromatographic step.

Dwg.0/2

L3 ANSWER 21 OF 21 WPIDS COPYRIGHT 2005 THE THOMSON CORP on STN

ACCESSION NUMBER: 2003-361747 [34] WPIDS

CROSS REFERENCE: 2004-675606 [66]

DOC. NO. CPI: C2003-095381

TITLE: New metal ion affinity peptide useful, when fused to a fusion partner polypeptide, for protein purification methods and to study protein-protein interactions and nucleic acid-protein interactions.

DERWENT CLASS: B04 D16

INVENTOR(S): JOKHADZE, G G; TCHAGA, G S

PATENT ASSIGNEE(S): (JOKH-I) JOKHADZE G G; (TCHA-I) TCHAGA G S

COUNTRY COUNT: 1

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
US 2002164718	A1	20021107	(200334)*		23

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE

US 2002164718 A1 Provisional US 1998-101867P 19980925
CIP of US 1999-404017 19990923
US 2001-858332 20010515

PRIORITY APPLN. INFO: US 1998-101867P 19980925; US
1999-404017 19990923; US
2001-858332 20010515
AN 2003-361747 [34] WPIDS
CR 2004-675606 [66]
AB US2002164718 A UPAB: 20041015
NOVELTY - A metal ion affinity peptide (I), is new.
DETAILED DESCRIPTION - A new metal ion affinity peptide (I) consists of formula 1,2
(His-X1-X2)n1-(His-X3-X4-X5)n2-(His-X6)n3 (1)
X1 and X2 = independently an amino acid with an aliphatic or an amide side chain;
X1 and X2 = independently an amino acid with an aliphatic or an amide side chain;
X3, X4 and X5 = independently an amino acid with a basic side chain (except His) or an acidic side chain;
X6 = an amino acid with an aliphatic or an amide side chain;
n1 and n2 = independently 1 - 3; and
n3 = 1 - 5;
(His-Asn)n (2)
n = 3 - 10
(His-X1-X2)n (3)
X1 and X2 = an amino acid having an acidic side chain; and
n = 3 - 10.
INDEPENDENT CLAIMS are also included for the following:
(1) a fusion protein comprising a polypeptide fused at its amino- or carboxy-terminus to (I);
(2) an isolated polynucleotide (II) comprising a nucleotide sequence encoding (I);
(3) a recombinant vector (III) comprising (II);
(4) a recombinant host cell comprising (III); and
(5) a kit for purifying a protein, comprising (III) and a metal ion affinity resin.
USE - The metal ion affinity peptide in a fusion protein allows purification of the fusion protein on a metal chelating resin. The method involves contacting a sample comprising a fusion protein with a metal **ion chelate resin** comprising a first metal ion, preferably a hard metal ion such as Fe3+, Ca2+ and Al3+ and eluting any resultant bound fusion protein from the resin. The resin comprises an immobilized Co2+ ion. The method further comprises contacting the sample with a second **immobilized metal ion** affinity resin comprising a second **immobilized metal ion** and eluting any resultant bound fusion protein from the first and second resins. The second metal ion is an intermediate metal ion such as Cu2+, Ni2+, Zn2+ and Co2+ (claimed). The metal ion affinity peptide-tagged recombinant proteins are useful for the study of protein-protein interactions and nucleic acid molecule-protein interactions, using solid phase **immobilized metal ion** affinity chromatography (IMAC). They are also useful in high throughput systems which find use in massive parallel gene expression experiments, e.g. to determine the effect of an agent on synthesis of a protein or set of proteins, to analyze developmental stage-specific, or tissue-specific synthesis of a protein and to analyze the phosphorylation state of a protein. These methods find use in applications to characterize a protein of unknown identity or function, and in enzymatic reactions.
Dwg.0/6

=> d his

(FILE 'HOME' ENTERED AT 10:39:02 ON 09 FEB 2005)

FILE 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, ANTE, AQUALINE, AQUASCI, BIOBUSINESS, BIOCOMMERCE, BIOENG, BIOSIS, BIOTECHDS, BIOTECHNO, CABA, CANCERLIT, CAPLUS, CEABA-VTB, CEN, CIN, CONFSCI, CROPB, CROPU, DDFB, DGENE, DISSABS, DRUGB, DRUGMONOG2, ...' ENTERED AT 10:39:47 ON 09 FEB 2005

L1 65 S ION CHELATE RESIN
L2 4567 S IMMOBILIZED METAL ION
L3 21 S L1 AND L2

=> s ion chelate resin and iron
21 FILES SEARCHED...
37 FILES SEARCHED...
53 FILES SEARCHED...
71 FILES SEARCHED...
L4 9 ION CHELATE RESIN AND IRON

=> d L4 1-9 ibib,abs

L4 ANSWER 1 OF 9 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:759732 CAPLUS
DOCUMENT NUMBER: 141:273989
TITLE: Purification of fusion proteins using immobilized bi-metal affinity chromatography
INVENTOR(S): Tchaga, Grigoriy S.; Jokhadze, George G.
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 20 pp., Cont.-in-part of U.S. Pat. Appl. 2002 164,718.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 2004180415	A1	20040916	US 2004-762588		20040121
US 2002164718	A1	20021107	US 2001-858332		20010515
PRIORITY APPLN. INFO.:			US 2001-858332	A2	20010515
			US 2003-441804P	P	20030121
			US 1998-101867P	P	19980925
			US 1999-404017	B2	19990923

AB The present invention relates to IMAC (Immobilized Metal Affinity Chromatog.). The present invention provides methods of purifying proteins that include a metal ion affinity peptide. The methods generally involve contacting a fusion protein that includes a metal ion affinity peptide with at least two different metal ion chelating resins. In certain representative embodiments, the methods include contacting a fusion protein with a first metal **ion chelate resin** having a first immobilized metal ion; eluting any bound protein from the first metal **ion chelate resin**, to produce an eluate; contacting the eluate with a second metal **ion chelate resin** having a second immobilized metal ion; and eluting any bound protein from the second metal **ion chelate resin**. Also provided are kits for use in practicing the subject methods. An illustrative purification protocol for Bi-MAC (Bi-Metal Affinity Chromatog.) is shown. The subject methods find use in a variety of protein purification applications.

L4 ANSWER 2 OF 9 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1994:328077 CAPLUS
DOCUMENT NUMBER: 120:328077

TITLE: Regeneration of tin plating solutions
INVENTOR(S): Hamahara, Kyoko; Ogata, Hajime; Kikuchi, Toshihiro; Akao, Kenichiro; Morito, Nobuyuki
PATENT ASSIGNEE(S): Kawasaki Steel Co, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06002198	A2	19940111	JP 1992-162694	19920622

PRIORITY APPLN. INFO.: JP 1992-162694 19920622

AB The solns. are regenerated by treating with Sn **ion chelate resins** (e.g. Diaion CR 10), oxidizing by H2O2 Fe2+ to Fe3+, treating with Fe3+ chelate resins (e.g. Diaion CR 10) to obtain acidic solns., and treating the Sn ion-absorbed resins with the acidic solns.

L4 ANSWER 3 OF 9 PROMT COPYRIGHT 2005 Gale Group on STN

ACCESSION NUMBER: 2002:620912 PROMT
TITLE: OPD Chemical Buyers Directory 2003: Chemicals & Related Materials. (M: Methyl Acrylate - Myrtenol).(Directory)
SOURCE: Chemical Market Reporter, (29 Oct 2002) pp. 365(19).
ISSN: ISSN: 1092-0110.
PUBLISHER: Schnell Publishing Company, Inc.
DOCUMENT TYPE: Newsletter
LANGUAGE: English
WORD COUNT: 10405
FULL TEXT IS AVAILABLE IN THE ALL FORMAT
AB METHYL ACRYLATE

L4 ANSWER 4 OF 9 USPATFULL on STN
ACCESSION NUMBER: 2004:44538 USPATFULL
TITLE: High throughput purification, characterization and identification of recombinant proteins
INVENTOR(S): Awrey, Donald E., Mississauga, CA, UNITED STATES
Mamelak, Daniel, Toronto, CANADA
Edwards, Aled, Toronto, CANADA
Dharamsi, Akil I., Richmond Hill, CANADA

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 2004033530	A1	20040219	
APPLICATION INFO.:	US 2003-409620	A1	20030408	(10)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2002-370667P	20020408 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: FOLEY HOAG, LLP, PATENT GROUP, WORLD TRADE CENTER WEST, 155 SEAPORT BLVD, BOSTON, MA, 02110
NUMBER OF CLAIMS: 58
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 3 Drawing Page(s)
LINE COUNT: 2592
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention provides high throughput assays for rapidly and simultaneously purifying, quantifying, determining the solubility profile, determining the purity and identifying a plurality of

recombinant proteins. The method comprises affinity protein purification; proteolytic digestion and analysis of the protein fragments by mass spectrometry in multi-well plates.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 5 OF 9 WPIDS COPYRIGHT 2005 THE THOMSON CORP on STN
ACCESSION NUMBER: 2004-675606 [66] WPIDS
CROSS REFERENCE: 2003-361747 [34]
DOC. NO. CPI: C2004-240867
TITLE: Purification of fusion protein comprising metal ion affinity peptide, by contacting sample comprising fusion protein with different metal **ion chelate resins** with respective immobilized metal ion.
DERWENT CLASS: B04
INVENTOR(S): JOKHADZE, G G; TCHAGA, G S
PATENT ASSIGNEE(S): (JOKH-I) JOKHADZE G G; (TCHA-I) TCHAGA G S
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
US 2004180415	A1	20040916	(200466)*		20

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 2004180415	A1 CIP of	US 2001-858332	20010515
	Provisional	US 2003-441804P	20030121
		US 2004-762588	20040121

PRIORITY APPLN. INFO: US 2003-441804P 20030121; US 2001-858332 20010515; US 2004-762588 20040121
AN 2004-675606 [66] WPIDS
CR 2003-361747 [34]
AB US2004180415 A UPAB: 20041015
NOVELTY - A fusion protein is purified by contacting a sample comprising fusion protein comprising a metal ion affinity peptide with first metal **ion chelate resin**; eluting bound fusion protein to produce a first eluate; contacting the first eluate with a second metal ion affinity resin; and eluting bound fusion protein to produce a product eluate comprising a purified fusion protein. The chelate resins respectively comprise immobilized metal ion.

DETAILED DESCRIPTION - A fusion protein is purified by contacting a sample comprising fusion protein having metal ion affinity peptide with first metal **ion chelate resin**; eluting bound fusion protein from the resin to produce a first eluate; contacting the first eluate with a second metal ion affinity resin; and eluting bound fusion protein from the resins to produce a product eluate comprising a purified fusion protein. The chelate resins respectively comprise immobilized metal ion.

An INDEPENDENT CLAIM is also included for a kit for purifying protein comprising first and second metal **ion chelate resins** with respective immobilized metal ion.

USE - For purifying a fusion protein having metal ion affinity peptide.

ADVANTAGE - The use of two different metal ions for purification of protein tagged with a single metal ion affinity peptide provides high degree of purification with a single chromatographic step.

Dwg.0/2

L4 ANSWER 6 OF 9 WPIDS COPYRIGHT 2005 THE THOMSON CORP on STN
ACCESSION NUMBER: 1987-219006 [31] WPIDS
DOC. NO. CPI: C1987-092267
TITLE: Purificn. of acid plating bath containing **iron** ions - using chelate resin with phosphoric, phosphinic or phosphonic acid gps..
DERWENT CLASS: A91 M11 M13
PATENT ASSIGNEE(S): (KURK) KURITA WATER IND LTD
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 62146299	A	19870630	(198731)*		5
JP 02044920	B	19901005	(199044)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 62146299	A	JP 1985-285333	19851218
JP 02044920	B	JP 1985-285333	19851218

PRIORITY APPLN. INFO: JP 1985-285333 19851218
AN 1987-219006 [31] WPIDS
AB JP 62146299 A UPAB: 19930922
Purificn. is effected by treating the bath with a chelate resin having at least one of phosphoric acid, phosphinic and phosphonic acid gps.

The chelate resin can be prepared e.g. by reaction of styrene-divinyl benzene copolymer with PCl3 followed by hydrlysis, the obtd. chelate resin having unit structure (I) (R is H, halogen or lower alkyl). The obtd. chelate resin may be then oxidised to produce a chelate resin having a unit structure (II). The treatment of the plating bath is e.g. effected using a fixed or fluidised bed column etc. at pH 1-6.

USE/ADVANTAGE - Fe ion can be selectively removed from the plating bath. Method is suitable for use in Zn plating steel sheets, etc.
0/0

L4 ANSWER 7 OF 9 WPIDS COPYRIGHT 2005 THE THOMSON CORP on STN
ACCESSION NUMBER: 1985-103342 [17] WPIDS
DOC. NO. CPI: C1985-045064
TITLE: Purificn. of copper electrolytic solution - using aqueous hydrochloric acid solution to desorb antimony, bismuth and **iron** ions from chelate resin.
DERWENT CLASS: A91 J01 M28
PATENT ASSIGNEE(S): (NIRA) UNITIKA LTD
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 60050192	A	19850319	(198517)*		4
JP 01008715	B	19890215	(198910)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 60050192	A	JP 1983-156972	19830827

PRIORITY APPLN. INFO: JP 1983-156972 19830827

AN 1985-103342 [17] WPIDS
AB JP 60050192 A UPAB: 19930925
Purificn. of Cu electrolytic solution comprising (i) Cu, Ni and/or As ions, (ii) Sb, Bi and/or Fe ions and (iii) sulphuric acid of concentration 50g/l or more, is described. The solution is contacted with a chelate resin having a chelate-forming gp. of aminomethylene-phosphonic acid gp., so that Sb, Bi and Fe ions in solution are adsorbed. The metal ion(s) is(are) desorbed with about 5.5-6.5 N-HCl aqueous solution.

USE/ADVANTAGE - Sb, Bi and Fe ions are effectively desorbed with HCl aqueous solution, and solution may sufficiently be purified.

L4 ANSWER 8 OF 9 WPIDS COPYRIGHT 2005 THE THOMSON CORP on STN
ACCESSION NUMBER: 1984-251908 [41] WPIDS
DOC. NO. CPI: C1984-106244
TITLE: Purificn. of concentrate sulphuric acid solns. - containing entrained antimony, bismuth, ferric ions with chelating resins containing phosphonato methyl amino ligands.
DERWENT CLASS: A91 E36 J01 M11
INVENTOR(S): ECHIGO, Y; NAGAI, T M
PATENT ASSIGNEE(S): (NAGA-I) NAGAI T; (NIRA) UNITIKA LTD
COUNTRY COUNT: 8
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
EP 121337	A	19841010	(198441)*	EN	22
R: BE DE FR GB					
AU 8425229	A	19840906	(198443)		
JP 59162108	A	19840913	(198443)		
US 4559216	A	19851217	(198602)		
CA 1207980	A	19860723	(198634)		
EP 121337	B	19870610	(198723)	EN	
R: BE DE FR GB					
DE 3464130	G	19870716	(198729)		
JP 62061522	B	19871222	(198803)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
EP 121337	A	EP 1984-301373	19840302
JP 59162108	A	JP 1983-35111	19830303
US 4559216	A	US 1984-586488	19840305

PRIORITY APPLN. INFO: JP 1983-35111 19830303
AN 1984-251908 [41] WPIDS
AB EP 121337 A UPAB: 19930925
Purificn. of sulphuric acid solns. (I), containing min. 50g. H_2SO_4/litre, by absorbing entrained Sb, Bi, Fe metal ion species on a chelating resin (II) having incorporated N-phosphonatomethyl prim. or sec. alkylamine chelate-forming gps.

(I) may also contain Cu, Ni, As ions and it is especially a copper electrolyte; (II) is a phenolic chelating resin, especially a phenol/ HCHO matrix with iminobis(methylenephosphoric acid) functional gps.; and absorbed metal ions are eluted from (II) with aqueous HCl, at least IN and especially 5.5-6.5 N. The process is especially by passing (I) through a column of (II) at rate SV 0.5-20 hr. -1, especially at 1-5 hr. -1 and at 18-80 deg. C.

ADVANTAGE/USE - The process provides easy, economical separation of entrained ions from highly concentrate sulphuric acid solns. with no ecological problems and without consumption of electrical energy. It is especially useful for purification of copper electrolytes.

0/0

ABEQ EP 121337 B UPAB: 19930925
A method for purification of a sulphuric acid solution entraining a metal ion species selected from the group consisting of antimony ions, bismuth ions, and **iron** ions and containing at least 50 g of sulphuric acid per litre, comprising: exposing the sulphuric acid solution to a chelating resin possessing a group having methylene-phosphonic acid group which substitutes a hydrogen atom of a primary or secondary alkylamino group incorporated as a chelate forming group into a resin matrix to effect adsorption on the chelating resin; and allowing the chelating resin to separate the metal ion species adsorbed on the chelating resin from the sulphuric solution.

ABEQ US 4559216 A UPAB: 19930925
A H2SO4 (HS) soln. contg. Sb, Bi and/or Fe ions and at least 50g HS per ltr. is A) treated with a chelating resin having methylene phosphonic acid gps. substd. for H or prim. or sec. alkylamino gps. as chelating gps. on the resin matrix and B) allowing the chelating resin to separate the metal ions from the soln. by absorption onto the resin.

The chelating resin is pref. a phenolic resin, esp. a phenol/ HCOH resin contg. imino-bis(methylene phonic acid) as functional gps. The acid soln. can also contain Cu, Ni and As ions and is esp. a Cu electrolyte. The resin is afterwards eluted with at least 1N, esp. 5.5-6.5 N HCl.

ADVANTAGE - Very strong HS solns. can be purified effectively and simply without creating any ecological problems.

L4 ANSWER 9 OF 9 WPIDS COPYRIGHT 2005 THE THOMSON CORP on STN
ACCESSION NUMBER: 1983-42427K [18] WPIDS
DOC. NO. CPI: C1983-041346
TITLE: Removal of mercury from effluent - by adding organic sulphur cpd. and **iron** salts to ppte. mercury sulphide(s) and adsorbing any mercury ions on chelate resin.
DERWENT CLASS: D15 J01
PATENT ASSIGNEE(S): (OSAS) OSAKA SODA KK
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 58049490	A	19830323	(198318)*		5

PRIORITY APPLN. INFO: JP 1981-146903 19810916
AN 1983-42427K [18] WPIDS
AB JP 58049490 A UPAB: 19930925
Hg ion is removed from water by (i) adding soluble sulphide, e.g. Na2S, K2S, etc. and/or soluble organic sulphur cpd., e.g. trithiocyanuric acid, derivs., alkali metal diethyldithiocarbamate etc. to remove the greater part of Hg ion as insoluble sediments; (ii) adding Fe salt, e.g. FeCl2, FeCl3, Fe2(SO4)3, etc. followed by adjusting the pH to 6-11 to form flocs of Fe hydroxide, with which excess of alkali metal sulphide and HgS(2-) ion, etc. are coprecipitated; (iii) subjecting the separated liquor to oxidising treatment to convert HgS colloids, organic Hg mercaptide and a remaining portion of HgS(2-) etc. into soluble Hg(2+) and SO4(2-) ions with Cl2 or NACL etc.; and (iv) contacting with adsorber, e.g. Hg-adsorbing chelate resin, etc. to remove a remaining very small amount of Hg(2+) ion.

The effluent is adjusted to pH of 7-11 after the addition of the soluble sulphide or the soluble organic sulphur cpd., and the oxidation treatment is carried out at pH value of 4-8.

=> s chelate resin with iron
20 FILES SEARCHED...

32 FILES SEARCHED...
52 FILES SEARCHED...
55 FILES SEARCHED...
71 FILES SEARCHED...
L5 38 CHELATE RESIN WITH IRON

=> d L5 1-38 ibib,abs

L5 ANSWER 1 OF 38 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1995:408842 CAPLUS
DOCUMENT NUMBER: 122:167645
TITLE: Recovery and regeneration of tin coating baths
INVENTOR(S): Akao, Kenichiro; Ogata, Hajime; Kikuchi, Toshihiro; Mochizuki, Kazuo
PATENT ASSIGNEE(S): Kawasaki Steel Co, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06346299	A2	19941220	JP 1993-140478	19930611
PRIORITY APPLN. INFO.:			JP 1993-140478	19930611

AB The process comprises (1) removing Sn ion from Fe ion- and toxic cation-containing Sn coating baths by passing through Sn ion selective-adsorbing chelate resins to obtain recovery acid solns.; (2) removing the Fe ion and toxic cations from the residual solns. by passing through Fe ion selective-adsorbing chelate resins; (3) desorbing the Sn ion from the Sn ion-adsorbed chelate resins by passing through mixed acid solns. containing the recovery acid solns.; (4) removing excess acids in the Sn ion-containing mixed acid solns. by electrodialysis or diffusion dialysis using ion exchange membranes, and optionally (5) recycling the mixed acid solns. into the coating baths after adjusting components, and preferably containing activated C treatment before the adjusting.

L5 ANSWER 2 OF 38 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1994:510840 CAPLUS
DOCUMENT NUMBER: 121:110840
TITLE: Structural Analysis of **Chelate Resin** -**Iron** Complex by Using Extended X-ray Absorption Fine Structure Spectroscopy
AUTHOR(S): Teranishi, Toshiharu; Harada, Masafumi; Asakura, Kiyotaka; Asanuma, Hiroyuki; Saito, Yasukazu; Toshima, Naoki
CORPORATE SOURCE: Faculty of Engineering, University of Tokyo, Tokyo, 113, Japan
SOURCE: Journal of Physical Chemistry (1994), 98(33), 7967-75
CODEN: JPCHAX; ISSN: 0022-3654
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Polystyrene-based chelate resin, functionalized by tridentate iminodiacetic acid (IDA) moieties, has the special ability to increase the sp. surface area by complexing with multivalent cations and drying after being washed with the organic solvent miscible with water. The extended X-ray absorption fine structure (EXAFS) technique was applied to analyze the structure of the chelate resin-Fe(II) and -Fe(III) complexes. The EXAFS data for the chelate resin-Fe(III) complex, which has the largest surface area among the various chelate resin-metal complexes investigated, indicate that the Fe(III) ion has the coordination number of 6 with one iminodiacetic acid moiety and three water mols., which are retained in a dry state. The surplus pos. charge, due to the 1:1 complexation of

Fe(III) ion with IDA moiety (-2), repulses other surplus pos. charges or Fe(III) ions, resulting in preventing the pores from shrinking and in making the surface area quite large. In contrast, in the case of the chelate resin-Fe(II) complex, the coordination number of the Fe(II) ion is 4, suggesting the coordination of Fe(II) to four or five oxygen and/or nitrogen atoms including one or two iminodiacetic acid moieties and one water mol. which cannot be removed by drying after being washed with the solvent. It has also been confirmed that the chelate resin-Fe(II) complex can adsorb an NO gas by coordination of NO to the vacant orbital of Fe(II) ions, resulting in the 5-coordinate structure.

L5 ANSWER 3 OF 38 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1990:596871 CAPLUS
DOCUMENT NUMBER: 113:196871
TITLE: Adsorption of nitrogen monoxide by the **chelate resin**-immobilized **iron**(II) complex and its application for simultaneous removal of nitrogen monoxide and sulfur dioxide
AUTHOR(S): Asanuma, Hiroyuki; Takemura, Akihiko; Toshima, Naoki; Hirai, Hidefumi
CORPORATE SOURCE: Fac. Eng., Univ. Tokyo, Tokyo, 113, Japan
SOURCE: Industrial & Engineering Chemistry Research (1990), 29(11), 2267-72
CODEN: IECRED; ISSN: 0888-5885
DOCUMENT TYPE: Journal
LANGUAGE: English
AB An aqueous dispersion of a resin Fe(II) complex was prepared from FeSO4 and a chelate resin containing iminodiacetic acid moieties. The dispersion can simultaneously adsorb NO and SO2 from a dilute mixed gas used as a model of a flue gas. The adsorbent dispersion was slightly deactivated by O. The rate of deactivation of the dispersion, however, was much less than that of an aqueous solution of the corresponding monomeric model due to the slow diffusion of O into the resin in the former case. Even after deactivation, the chelate resin can be easily recovered from the deactivated aqueous dispersions by separation by filtration, washing with a HCl solution, and neutralization with a NaOH solution The recovered resin can be reused as a starting material for the preparation of fresh adsorbent dispersion by mixing with an aqueous FeSO4 solution

L5 ANSWER 4 OF 38 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1990:199763 CAPLUS
DOCUMENT NUMBER: 112:199763
TITLE: **Chelate resin-iron**(II) complex: adsorption and desorption of nitrogen monoxide at the dry state
AUTHOR(S): Asanuma, Hiroyuki; Toshima, Naoki
CORPORATE SOURCE: Fac. Eng., Univ. Tokyo, Tokyo, 113, Japan
SOURCE: Journal of Polymer Science, Part A: Polymer Chemistry (1990), 28(4), 907-22
CODEN: JPACEC; ISSN: 0887-624X
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A chelate resin-immobilized Fe(II) complex was prepared from Fe(II) and divinylbenzene-styrene copolymer which is functionalized by iminodiacetic acid group. It is activated by drying after having been washed with MeOH. The resin complex can rapidly adsorb NO, and the NO adsorbed on the complex can be released by the treatment with heat. The adsorption of NO proceeds through the 1:1 complex formation of the NO mol. with the Fe(II) atom, and its complex formation constant was calculated as 8330 atm-1 at room temperature from Langmuir plots. This value does not depend on the solvents used for washing. The activation of the resin complex by the treatment of washing with MeOH is derived by increasing the amount of effective Fe(II) ions due to the increase in the surface area. Moreover, this resin complex was revealed to have high complex formation constant with NO and

high durability to dioxygen compared with an aqueous solution of ethylenediaminetetraacetato-Fe(II) complex, which is the corresponding monomeric absorbent commonly used for NO.

L5 ANSWER 5 OF 38 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1989:615319 CAPLUS
DOCUMENT NUMBER: 111:215319
TITLE: Rapid coordination of nitrogen monoxide to iron(II) in a mixed valence iron complex immobilized on a chelate resin in the dry state
AUTHOR(S): Asanuma, Hiroyuki; Toshima, Naoki
CORPORATE SOURCE: Fac. Eng., Univ. Tokyo, Tokyo, 113, Japan
SOURCE: Journal of the Chemical Society, Chemical Communications (1989), (15), 1075-6
CODEN: JCCCAT; ISSN: 0022-4936
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Rapid coordination of NO with Fe(II) was observed for a chelate resin-immobilized Fe(II) and Fe(III) complex, compared with the corresponding chelate resin-immobilized Fe(II) complex, due to the increase in surface area caused by the introduction of Fe(III) into the resin.

L5 ANSWER 6 OF 38 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1989:445658 CAPLUS
DOCUMENT NUMBER: 111:45658
TITLE: The removal of nitrogen monoxide by the dry iron(II) complex immobilized on chelate resin. The preparation and characterization of the complex
AUTHOR(S): Toshima, Naoki; Asanuma, Hiroyuki; Hirai, Hidefumi
CORPORATE SOURCE: Fac. Eng., Univ. Tokyo, Tokyo, 113, Japan
SOURCE: Bulletin of the Chemical Society of Japan (1989), 62(3), 893-902
CODEN: BCSJA8; ISSN: 0009-2673
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A new dry-type adsorbent for NO was successfully prepared from an Fe(II) salt and a chelate resin containing iminodiacetic acid moieties. The capability of adsorbing NO depends greatly on the preparation method. The very active adsorbent was prepared by mixing 31.4 mmol of FeSO4 and a com. chelate resin containing 21.0 mmol of iminodiacetic acid moieties; the mixture was dried, after the solid parts had been washed with MeOH. The resulting solid adsorbent could adsorb >99% of NO from 6 dm3 of N gas containing 1000 ppm of NO within 25 min. This high capability for adsorbing NO was derived from the increase in the surface area (43.1 m2/g) of the resin-immobilized Fe(II) complex upon washing with MeOH. The mechanism for the increase in the surface area is also discussed.

L5 ANSWER 7 OF 38 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1989:199702 CAPLUS
DOCUMENT NUMBER: 110:199702
TITLE: The adsorption and desorption of nitrogen oxide by the aqueous dispersion of the **chelate resin**-immobilized **iron**(II) complex
AUTHOR(S): Toshima, Naoki; Asanuma, Hiroyuki; Yamaguchi, Kazuaki; Hirai, Hidefumi
CORPORATE SOURCE: Fac. Eng., Univ. Tokyo, Tokyo, 113, Japan
SOURCE: Bulletin of the Chemical Society of Japan (1989), 62(2), 563-70
CODEN: BCSJA8; ISSN: 0009-2673
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Aqueous dispersions of the **chelate resin-iron** (II) complex were prepared by ion-exchange in water from iron(II) sulfate

and a chelate resin containing iminodiacetic acid moieties. The resulting dispersions in water (50 cm3) can absorb 78% of the NO from 6 dm3 of N gas containing 1000 ppm of NO at 25°. The adsorption rate of NO by the dispersions depends greatly on both the particle size of the chelate resin used and the concentration of iron(II) in the supernatant. A fast adsorption of NO can be achieved by using small particles of the chelate resin and by dissolving a large amount of iron(II) ions in the aqueous part of the dispersions. The adsorption and desorption of NO can be understood in terms of a 1:1 reversible coordination of NO to the iron(II) ion immobilized on the chelate resin. The equilibrium constant, enthalpy change, and entropy change for the above adsorbing reaction were 3.11 + 104 dm3 mol-1, -45.6 kJ mol-1, and -68.2 kJ-1 mol-1, resp. Since the adsorbing reaction of NO in this system is reversible, the adsorbed NO can be released by heating the dispersions which have already adsorbed NO. The amount of NO released can be predicted from the equilibrium constant at the releasing temperature Moreover, a concentrated recovery of the NO can be achieved by the present aqueous dispersions system.

L5 ANSWER 8 OF 38 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1986:231104 CAPLUS
DOCUMENT NUMBER: 104:231104
TITLE: A new dry-type adsorbent of **chelate resin-iron**(II) complexes. Preparation and adsorption of nitrogen oxide
AUTHOR(S): Toshima, Naoki; Asanuma, Hiroyuki; Hirai, Hidefumi
CORPORATE SOURCE: Fac. Eng., Univ. Tokyo, Tokyo, 113, Japan
SOURCE: Chemistry Letters (1986), (5), 667-70
CODEN: CMLTAG; ISSN: 0366-7022
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A new dry-type adsorbent was prepared by washing the chelate resin beads holding Fe(II) with a hydrophilic organic solvent, followed by vacuum drying. It adsorbed more than 99% of N oxide from 6 dm3 of N gas containing 980 ppm N oxide in 25 min. The N oxide is desorbed by raising temperature up to 100° under vacuum.

L5 ANSWER 9 OF 38 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1985:410740 CAPLUS
DOCUMENT NUMBER: 103:10740
TITLE: **Chelate resin**-immobilized **iron**(II) complexes as new nitrogen oxide adsorbents
AUTHOR(S): Hirai, Hidefumi; Toshima, Naoki; Asanuma, Hiroyuki
CORPORATE SOURCE: Fac. Eng., Univ. Tokyo, Tokyo, 113, Japan
SOURCE: Chemistry Letters (1985), (5), 655-8
CODEN: CMLTAG; ISSN: 0366-7022
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Fe(II) ions were immobilized on the chelate resin by treating crosslinked polystyrene beads involving iminodiacetic acid moieties with FeSO4 in water. The resin-immobilized Fe(II) complexes, especially those prepared with fine beads, can adsorb NO rapidly in water from N atmospheric containing 1000 ppm NO.

L5 ANSWER 10 OF 38 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1980:535804 CAPLUS
DOCUMENT NUMBER: 93:135804
TITLE: Phenolic chelate resins for recovery of heavy metals
INVENTOR(S): Hirai, Masahide; Iwatani, Yoshiaki
PATENT ASSIGNEE(S): Unitika Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 55040744	A2	19800322	JP 1978-114913	19780918
PRIORITY APPLN. INFO.:			JP 1978-114913 A	19780918

AB Phenolic chelate resins prepared from phenols, phenol compds., and aldehydes are used as adsorbents for recovery of heavy metals from aqueous solns. Thus, 100 parts 2,6-(1-3-dihydroxyphenylene)bis(methyliminodiacetic acid) [74838-55-4] was mixed with 22% NaOH 273 and formalin 20.3 parts, reacted at 65-70° for 2 h, cooled, reacted with 23.5 parts PhOH at 85-90° for 4h, mixed with 80.5% formalin and neutralized to prepare a resin. When the resin was stirred in an aqueous solution containing Fe3+ its Fe3+ adsorption capacity was 1.7 mmol/g dried resin.

L5 ANSWER 11 OF 38 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1978:535619 CAPLUS
DOCUMENT NUMBER: 89:135619
TITLE: Removal of dissolved oxygen from water
INVENTOR(S): Yoshikawa, Toshio
PATENT ASSIGNEE(S): Unitika Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 2 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 53000658	A2	19780106	JP 1976-74055	19760622
PRIORITY APPLN. INFO.:			JP 1976-74055 A	19760622

AB Dissolved O is removed from water by chelating ion exchange resin containing Fe6+. A hydrophilic resin (phenolic resin) having iminodiacetic acid groups is preferred. Thus, Uniselect UR-10 resin [63590-14-7] was added to a FeSO4 solution to give a resin containing Fe2+, 1 mL of which was added to 100 mL deionized water (dissolved O 8.01 ppm), the mixture was stirred in a sealed container for 1, 2, 6, and 12 h to give dissolved O content of 1.6, 1.0, 0.6, and 0.09 ppm, resp.

L5 ANSWER 12 OF 38 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1974:522133 CAPLUS
DOCUMENT NUMBER: 81:122133
TITLE: Regeneration of chelate resins for removing iron ions from well water
INVENTOR(S): Nakanishi, Toshio; Yamaguchi, Noboru
PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 49028594	A2	19740314	JP 1972-70315	19720713
PRIORITY APPLN. INFO.:			JP 1972-70315 A	19720713

AB Aminocarboxylic acid-type chelate resin containing Fe [7439-89-6] ions is

ion-exchanged with Ca or Mg ions during or after treatment with a reducing agent to regenerate the resin. The resin is used to remove small amount of Fe in hard water. Thus, Diaion CR-10 [37360-89-7] (chelate resin) was immersed in Ca(H2PO2)2, and the Ca-chelate resin was used to treat well water with hardness 50 containing 1.4 ppm Fe. The resin with 23:77 Fe-Ca chelated groups was stirred 24 hr in 100 times its weight of aqueous solution containing
1% Ca ascorbate and 3% Ca gluconate to remove 92% of the chelated Fe from the resin.

L5 ANSWER 13 OF 38 JICST-EPlus COPYRIGHT 2005 JST on STN
ACCESSION NUMBER: 920844264 JICST-EPlus
TITLE: Structural Analysis of **Chelate Resin-Iron** Complexes by EXAFS Measurement.
AUTHOR: TERANISHI TOSHIHARU; HARADA MASASHI; SAITO YASUKAZU; TOSHIMA NAOKI
ASAKURA KIYOTAKA
CORPORATE SOURCE: Univ. of Tokyo, Faculty of Engineering
Univ. of Tokyo, Faculty of Science
SOURCE: Kobunshi Gakkai Yokoshu (Polymer Preprints, Japan), (1992) vol. 41, no. 7, pp. 2442-2444. Journal Code: Z0703B (Fig. 2, Tbl. 3, Ref. 5)
PUB. COUNTRY: Japan
DOCUMENT TYPE: Conference; Short Communication
LANGUAGE: Japanese
STATUS: New

L5 ANSWER 14 OF 38 JICST-EPlus COPYRIGHT 2005 JST on STN
ACCESSION NUMBER: 890210348 JICST-EPlus
TITLE: The adsorption and desorption of nitrogen oxide by the aqueous dispersion of the **chelate resin**-immobilized **iron**(II) complex.
AUTHOR: TOSHIMA N; ASANUMA H; YAMAGUCHI K; HIRAI H
CORPORATE SOURCE: Univ. Tokyo, Tokyo, JPN
SOURCE: Bull Chem Soc Jpn, (1989) vol. 62, no. 2, pp. 563-570. Journal Code: G0450A (Fig. 12, Tbl. 2, Ref. 16)
CODEN: BCSJA8; ISSN: 0009-2673
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article
LANGUAGE: English
STATUS: New
AB Aqueous dispersions of the **chelate resin-iron** (II) complex were prepared by ion-exchange in water from iron(II) sulfate and a chelate resin containing iminodiacetic acid moieties. The resulting dispersions in water (50cm3) can adsorb 78% of the nitrogen oxide(NO) from 6dm3 of nitrogen gas containing 1000ppm of nitrogen oxide at 25.DEG.C. The adsorption rate of NO by the dispersions depends greatly on both the particle size of the chelate resin used and the concentration of iron(II) in the supernatant. A fast adsorption of nitrogen oxide can be achieved by using small particles of the chelate resin and by dissolving a large amount of iron(II) ions in the aqueous part of the dispersions. The adsorption and desorption of nitrogen oxide can be understood in terms of a 1:1 reversible coordination of NO to the iron(II) ion immobilized on the chelate resin. The equilibrium constant, enthalpy change, and entropy change for the above adsorbing reaction were 3.11*104dm3mol-1, -45.6kJ mol-1, and -68.2JK-1mol-1 respectively. Since the adsorbing reaction of NO in this system is reversible, the adsorbed NO can be released by heating the dispersions which have already adsorbed NO. The amount of the released NO can be predicted from the equilibrium constant at the releasing temperature. Moreover, a concentrated recovery of the NO can be achieved by the present aqueous dispersions system.(author abst.)

L5 ANSWER 15 OF 38 JICST-EPlus COPYRIGHT 2005 JST on STN
ACCESSION NUMBER: 860364315 JICST-EPlus

TITLE: A new dry-type adsorbent of **chelate resin** **-iron**(II) complexes. Preparation and adsorption of nitrogen oxide.
AUTHOR: TOSHIMA N; ASANUMA H; HIRAI H
CORPORATE SOURCE: Univ. Tokyo
SOURCE: Chem Lett, (1986) no. 5, pp. 667-670. Journal Code: S0742A (Fig. 2, Tbl. 1, Ref. 9)
CODEN: CMLTAG; ISSN: 0366-7022
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Short Communication
LANGUAGE: English
STATUS: New

L5 ANSWER 16 OF 38 JICST-EPlus COPYRIGHT 2005 JST on STN
ACCESSION NUMBER: 850302780 JICST-EPlus
TITLE: **Chelate resin**-immobilized **iron** (II) complexes as new nitrogen oxide adsorbents.
AUTHOR: HIRAI H; TOSHIMA N; ASANUMA H
CORPORATE SOURCE: Univ. Tokyo
SOURCE: Chem Lett, (1985) no. 5, pp. 655-658. Journal Code: S0742A (Fig. 3, Ref. 12)
CODEN: CMLTAG; ISSN: 0366-7022
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Short Communication
LANGUAGE: English
STATUS: New

L5 ANSWER 17 OF 38 PROMT COPYRIGHT 2005 Gale Group on STN

ACCESSION NUMBER: 2002:620895 PROMT
TITLE: OPD Chemical Buyers Directory 2003: Chemicals & Related Materials. (A: Abrasives - 4-Aminobutyric Acid).(Directory)
SOURCE: Chemical Market Reporter, (29 Oct 2002) pp. 61(22).
ISSN: ISSN: 1092-0110.
PUBLISHER: Schnell Publishing Company, Inc.
DOCUMENT TYPE: Newsletter
LANGUAGE: English
WORD COUNT: 11075
FULL TEXT IS AVAILABLE IN THE ALL FORMAT
AB A

L5 ANSWER 18 OF 38 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation. on STN
ACCESSION NUMBER: 94:525971 SCISEARCH
THE GENUINE ARTICLE: PC619
TITLE: STRUCTURAL-ANALYSIS OF **CHELATE RESIN-IRON** COMPLEX BY USING EXTENDED X-RAY-ABSORPTION FINE-STRUCTURE SPECTROSCOPY
AUTHOR: TERANISHI T; HARADA M; ASAKURA K; ASANUMA H; SAITO Y; TOSHIMA N (Reprint)
CORPORATE SOURCE: UNIV TOKYO, FAC ENGN, DEPT IND CHEM, BUNKYO KU, TOKYO 113, JAPAN (Reprint); UNIV TOKYO, FAC ENGN, DEPT IND CHEM, BUNKYO KU, TOKYO 113, JAPAN; UNIV TOKYO, FAC SCI, DEPT CHEM, BUNKYO KU, TOKYO 113, JAPAN
COUNTRY OF AUTHOR: JAPAN
SOURCE: JOURNAL OF PHYSICAL CHEMISTRY, (18 AUG 1994) Vol. 98, No. 33, pp. 7967-7975.
ISSN: 0022-3654.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: PHYS
LANGUAGE: ENGLISH
REFERENCE COUNT: 44
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB Polystyrene-based chelate resin, functionalized by tridentate

iminodiacetic acid moieties, has the special ability to increase the specific surface area by complexing with multivalent cations and drying after being washed with the organic solvent miscible with water. The extended X-ray absorption fine structure (EXAFS) technique was applied to analyze the structure of the chelate resin-Fe(II) and -Fe(III) complexes. The EXAFS data for the chelate resin-Fe(III) complex, which has the largest surface area among the various chelate resin-metal complexes investigated, indicate that the Fe(III) ion has the coordination number of 6 with one iminodiacetic acid moiety and three water molecules, which are retained in a dry state. The surplus positive charge, due to the 1:1 complexation of Fe(III) ion with IDA moiety (-2), repulses other surplus positive charges or Fe(III) ions, resulting in preventing the pores from shrinking and in making the surface area quite large. In contrast, in the case of the chelate resin-Fe(II) complex, the coordination number of the Fe(II) ion is 4, suggesting the coordination of Fe(II) to four or five oxygen and/or nitrogen atoms including one or two iminodiacetic acid moieties and one water molecule which cannot be removed by drying after being washed with the solvent. It has also been confirmed that the chelate resin-Fe(II) complex can adsorb an NO gas by coordination of NO to the vacant orbital of Fe(II) ions, resulting in the 5-coordinate structure.

L5 ANSWER 19 OF 38 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation. on STN
ACCESSION NUMBER: 90:627253 SCISEARCH
THE GENUINE ARTICLE: EH375
TITLE: ADSORPTION OF NITROGEN MONOXIDE BY THE **CHELATE RESIN** IMMOBILIZED **IRON**(II) COMPLEX AND ITS APPLICATION FOR SIMULTANEOUS REMOVAL OF NITROGEN MONOXIDE AND SULFUR-DIOXIDE
AUTHOR: ASANUMA H; TAKEMURA A; TOSHIMA N (Reprint); HIRAI H
CORPORATE SOURCE: UNIV TOKYO, FAC ENGN, DEPT IND CHEM, BUNKYO KU, TOKYO 113, JAPAN
COUNTRY OF AUTHOR: JAPAN
SOURCE: INDUSTRIAL & ENGINEERING CHEMISTRY RESEARCH, (1990) Vol. 29, No. 11, pp. 2267-2272.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: ENGI
LANGUAGE: ENGLISH
REFERENCE COUNT: 16

L5 ANSWER 20 OF 38 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation. on STN
ACCESSION NUMBER: 90:124211 SCISEARCH
THE GENUINE ARTICLE: CQ313
TITLE: **CHELATE RESIN IRON**(II) COMPLEX - ADSORPTION AND DESORPTION OF NITROGEN MONOXIDE AT THE DRY STATE
AUTHOR: ASANUMA H; TOSHIMA N (Reprint)
CORPORATE SOURCE: UNIV TOKYO, FAC ENGN, DEPT IND CHEM, BUNKYO KU, TOKYO 113, JAPAN
COUNTRY OF AUTHOR: JAPAN
SOURCE: JOURNAL OF POLYMER SCIENCE PART A-POLYMER CHEMISTRY, (1990) Vol. 28, No. 4, pp. 907-922.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: PHYS
LANGUAGE: ENGLISH
REFERENCE COUNT: 27

L5 ANSWER 21 OF 38 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation. on STN
ACCESSION NUMBER: 89:130053 SCISEARCH
THE GENUINE ARTICLE: T4986
TITLE: THE ADSORPTION AND DESORPTION OF NITROGEN-OXIDE BY THE AQUEOUS DISPERSION OF THE **CHELATE RESIN**

-IMMOBILIZED **IRON**(II) COMPLEX
AUTHOR: TOSHIMA N (Reprint); ASANUMA H; YAMAGUCHI K; HIRAI H
CORPORATE SOURCE: UNIV TOKYO, FAC ENGN, DEPT IND CHEM, BUNKYO KU, TOKYO 113, JAPAN (Reprint)
COUNTRY OF AUTHOR: JAPAN
SOURCE: BULLETIN OF THE CHEMICAL SOCIETY OF JAPAN, (1989) Vol. 62, No. 2, pp. 563-570.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: PHYS
LANGUAGE: ENGLISH
REFERENCE COUNT: 17

L5 ANSWER 22 OF 38 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation. on STN
ACCESSION NUMBER: 86:322358 SCISEARCH
THE GENUINE ARTICLE: C5254
TITLE: A NEW DRY-TYPE ADSORBENT OF **CHELATE RESIN-IRON**(II) COMPLEXES - PREPARATION AND ADSORPTION OF NITROGEN-OXIDE
AUTHOR: TOSHIMA N (Reprint); ASANUMA H; HIRAI H
CORPORATE SOURCE: UNIV TOKYO, FAC ENGN, DEPT IND CHEM, BUNKYO KU, TOKYO 113, JAPAN (Reprint)
COUNTRY OF AUTHOR: JAPAN
SOURCE: CHEMISTRY LETTERS, (1986) No. 5, pp. 667-670.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: PHYS; LIFE
LANGUAGE: ENGLISH
REFERENCE COUNT: 9

L5 ANSWER 23 OF 38 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation. on STN
ACCESSION NUMBER: 85:298233 SCISEARCH
THE GENUINE ARTICLE: AHW91
TITLE: **CHELATE RESIN**-IMMOBILIZED **IRON** (II) COMPLEXES AS NEW NITROGEN-OXIDE ADSORBENTS
AUTHOR: HIRAI H (Reprint); TOSHIMA N; ASANUMA H
CORPORATE SOURCE: UNIV TOKYO, FAC ENGN, DEPT IND CHEM, HONGO, BUNKYO KU, TOKYO 113, JAPAN (Reprint)
COUNTRY OF AUTHOR: JAPAN
SOURCE: CHEMISTRY LETTERS, (1985) No. 5, pp. 655-658.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: PHYS; LIFE
LANGUAGE: ENGLISH
REFERENCE COUNT: 11

L5 ANSWER 24 OF 38 TOXCENTER COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1995:148417 TOXCENTER
COPYRIGHT: Copyright 2005 ACS
DOCUMENT NUMBER: CA12214167645P
TITLE: Recovery and regeneration of tin coating baths
AUTHOR(S): Akao, Kenichiro; Ogata, Hajime; Kikuchi, Toshihiro; Mochizuki, Kazuo
CORPORATE SOURCE: ASSIGNEE: Kawasaki Steel Co
PATENT INFORMATION: JP 94346299 A2 20 Dec 1994
SOURCE: (1994) Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF.
COUNTRY: JAPAN
DOCUMENT TYPE: Patent
FILE SEGMENT: CAPLUS
OTHER SOURCE: CAPLUS 1995:408842
LANGUAGE: Japanese
ENTRY DATE: Entered STN: 20011116
Last Updated on STN: 20020903
AB The process comprises (1) removing Sn ion from Fe ion- and toxic

cation-containing Sn coating baths by passing through Sn ion selective-adsorbing chelate resins to obtain recovery acid solns.; (2) removing the Fe ion and toxic cations from the residual solns. by passing through Fe ion selective-adsorbing chelate resins; (3) desorbing the Sn ion from the Sn ion-adsorbed chelate resins by passing through mixed acid solns. containing the recovery acid solns.; (4) removing excess acids in the Sn ion-containing mixed acid solns. by electrodialysis or diffusion dialysis using ion exchange membranes, and optionally (5) recycling the mixed acid solns. into the coating baths after adjusting components, and preferably containing activated C treatment before the adjusting.

L5 ANSWER 25 OF 38 TOXCENTER COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1990:157511 TOXCENTER
COPYRIGHT: Copyright 2005 ACS
DOCUMENT NUMBER: CA11322196871D
TITLE: Adsorption of nitrogen monoxide by the **chelate resin**-immobilized **iron**(II) complex and its application for simultaneous removal of nitrogen monoxide and sulfur dioxide
AUTHOR(S): Asanuma, Hiroyuki; Takemura, Akihiko; Toshima, Naoki; Hirai, Hidefumi
CORPORATE SOURCE: Fac. Eng., Univ. Tokyo, Tokyo, 113, Japan.
SOURCE: Industrial & Engineering Chemistry Research, (1990) Vol. 29, No. 11, pp. 2267-72.
CODEN: IECRED. ISSN: 0888-5885.
COUNTRY: JAPAN
DOCUMENT TYPE: Journal
FILE SEGMENT: CAPLUS
OTHER SOURCE: CAPLUS 1990:596871
LANGUAGE: English
ENTRY DATE: Entered STN: 20011116
Last Updated on STN: 20021022

AB An aqueous dispersion of a resin-Fe(II) complex was prepared from FeSO4 and a chelate resin containing iminodiacetic acid moieties. The dispersion can simultaneously adsorb NO and SO2 from a dilute mixed gas used as a model of a flue gas. The adsorbent dispersion was slightly deactivated by O. The rate of deactivation of the dispersion, however, was much less than that of an aqueous solution of the corresponding monomeric model due to the slow diffusion of O into the resin in the former case. Even after deactivation, the chelate resin can be easily recovered from the deactivated aqueous dispersions by separation by filtration, washing with a HCl solution, and neutralization with a NaOH solution The recovered resin can be reused as a starting material for the preparation of fresh adsorbent dispersion by mixing with an aqueous FeSO4 solution

L5 ANSWER 26 OF 38 TOXCENTER COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1985:124062 TOXCENTER
COPYRIGHT: Copyright 2005 ACS
DOCUMENT NUMBER: CA10302010740A
TITLE: **Chelate resin**-immobilized **iron** (II) complexes as new nitrogen oxide adsorbents
AUTHOR(S): Hirai, Hidefumi; Toshima, Naoki; Asanuma, Hiroyuki
CORPORATE SOURCE: Fac. Eng., Univ. Tokyo, Tokyo, 113, Japan.
SOURCE: Chemistry Letters, (1985) No. 5, pp. 655-8.
CODEN: CMLTAG. ISSN: 0366-7022.
COUNTRY: JAPAN
DOCUMENT TYPE: Journal
FILE SEGMENT: CAPLUS
OTHER SOURCE: CAPLUS 1985:410740
LANGUAGE: English
ENTRY DATE: Entered STN: 20011116
Last Updated on STN: 20021112

AB Fe(II) ions were immobilized on the chelate resin by treating crosslinked polystyrene beads involving iminodiacetic acid moieties with FeSO4 in

water. The resin-immobilized Fe(II) complexes, especially those prepared with fine beads, can adsorb NO rapidly in water from N atmospheric containing 1000 ppm NO.

L5 ANSWER 27 OF 38 TOXCENTER COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1980:116575 TOXCENTER
COPYRIGHT: Copyright 2005 ACS
DOCUMENT NUMBER: CA09314135804F
TITLE: Phenolic chelate resins for recovery of heavy metals
AUTHOR(S): Hirai, Masahide; Iwatani, Yoshiaki
CORPORATE SOURCE: ASSIGNEE: Unitika Ltd.
PATENT INFORMATION: JP 8040744 22 Mar 1980
SOURCE: (1980) Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF.
COUNTRY: JAPAN
DOCUMENT TYPE: Patent
FILE SEGMENT: CAPLUS
OTHER SOURCE: CAPLUS 1980:535804
LANGUAGE: Japanese
ENTRY DATE: Entered STN: 20011116
Last Updated on STN: 20021203

AB Phenolic chelate resins prepared from phenols, phenol compds., and aldehydes are used as adsorbents for recovery of heavy metals from aqueous solns. Thus, 100 parts 2,6-(1-3-dihydroxyphenylene)bis(methyliminodiacetic acid) [74838-55-4] was mixed with 22% NaOH 273 and formalin 20.3 parts, reacted at 65-70° for 2 h, cooled, reacted with 23.5 parts PhOH at 85-90° for 4h, mixed with 80.5% formalin and neutralized to prepare a resin. When the resin was stirred in an aqueous solution containing Fe3+ its Fe3+ adsorption capacity was 1.7 mmol/g dried resin.

L5 ANSWER 28 OF 38 WPIDS COPYRIGHT 2005 THE THOMSON CORP on STN
ACCESSION NUMBER: 2004-242101 [23] WPIDS
DOC. NO. NON-CPI: N2004-192035
DOC. NO. CPI: C2004-094699
TITLE: Separation of impurity from iron or iron oxide involves adjusting pH of solution with which iron or iron oxide is dissolved, contacting solution with **chelate resin**, adsorbing **iron** ion in resin and separating impurities.
DERWENT CLASS: A89 E31 J01 S03
PATENT ASSIGNEE(S): (MITG) MITSUI MINING & SMELTING CO LTD
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 2003302315	A	20031024	(200423)*		5

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 2003302315	A	JP 2002-107510	20020410

PRIORITY APPLN. INFO: JP 2002-107510 20020410
AN 2004-242101 [23] WPIDS
AB JP2003302315 A UPAB: 20040405
NOVELTY - pH of a solution containing iron or iron oxide and mineral acid is adjusted to 1-2. The solution is contacted with a chelate resin which introduced imino diacetate group to styrene divinyl benzene copolymer. The iron ion in the solution is adsorbed in the resin, and impurities such as lead, cadmium, chromium and antimony are separated.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for analysis method of impurity in iron or iron oxide.

USE - For separating impurities from iron or iron oxide.

ADVANTAGE - The impurities are separated from iron or iron oxide with high accuracy. The method enables highly reliable quantitative analysis of amount of impurities in iron or iron oxide.

DESCRIPTION OF DRAWING(S) - The figure shows the relationship between the recovery of lead ion and cadmium ion, and pH. (Drawing includes non-English language text).

Dwg.1/4

L5 ANSWER 29 OF 38 WPIDS COPYRIGHT 2005 THE THOMSON CORP on STN
ACCESSION NUMBER: 1997-484610 [45] WPIDS
DOC. NO. CPI: C1997-154008
TITLE: Arsenic absorbing resin for collecting arsenic from (waste) water - comprises cation exchange resin and/or **chelate resin** carrying **iron** and hydroxyl ions.
DERWENT CLASS: A91 D15 E36 J01
PATENT ASSIGNEE(S): (MIYO) MIYOSHI YUSHI KK
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 09225298	A	19970902	(199745)*		5

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 09225298	A	JP 1996-61878	19960223

PRIORITY APPLN. INFO: JP 1996-61878 19960223
AN 1997-484610 [45] WPIDS
AB JP 09225298 A UPAB: 19971113
Arsenic absorbing resin (A) comprises a cation exchange resin and/or chelate resin to carrying iron and hydroxyl ions.

A method of absorbing arsenic in water or waste water by contacting it with (A).

USE - Used for collecting arsenic in water or waste water.

ADVANTAGE - This method is able to collect arsenic from aqueous solution without using coagulating agents or complicate processing as in conventional methods. This method is simple.

Dwg.0/1

L5 ANSWER 30 OF 38 WPIDS COPYRIGHT 2005 THE THOMSON CORP on STN
ACCESSION NUMBER: 1995-290374 [38] WPIDS
DOC. NO. CPI: C1995-130593
TITLE: Decolouring (N-substd.) aminoethane sulphonic acid alkali metal salt(s) - comprising treating crude aqueous solution with chelating resin to remove iron ion..
DERWENT CLASS: A60 B05 E12
PATENT ASSIGNEE(S): (TOYJ) TOSOH CORP
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 07188153	A	19950725	(199538)*		7

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 07188153	A	JP 1993-335328	19931228

PRIORITY APPLN. INFO: JP 1993-335328 19931228
AN 1995-290374 [38] WPIDS
AB JP 07188153 A UPAB: 19950927
Decolouring of aqueous alkali metal (N-alkyl) aminoethanesulphonate(s) solution (I) comprises (1) contacting coloured crude (I) containing alkali metal chloride(s) (II) with chelating resin (III); (2) concentration of the treated (I) below 110 deg.C under reduced pressure to crystallise (II), and (3) removal of (II).

Crude (I) (concentration 35 weight%, pH 10-11) contains sodium chloride, disodium 1,2-ethanedisulphate, iron ion, etc., crude (I) is contacted with (III) (e.g., ''IRC-718''(RTM)) at ordinary temperature to remove iron ion to obtain decoloured (I). The treated (I) is concentrated below 110 (pref. below 85) deg.C under reduced pressure (e.g., 170mmHg). The resulting slurry is centrifuged to obtain colourless (I).

USE/ADVANTAGE - (N-Alkyl)amino ethanesulphonic acid(s) and its alkali metl salt(s) are useful as penetrating agent, emulsion stabiliser, antistatic agent, pigment dispersing agent, drug, etc. It is colourless and high purity. (I) is readily obtained by simple procedure.
Dwg.0/0

L5 ANSWER 31 OF 38 WPIDS COPYRIGHT 2005 THE THOMSON CORP on STN
ACCESSION NUMBER: 1993-300068 [38] WPIDS
DOC. NO. CPI: C1993-133741
TITLE: Regenerating tin plating solution with reduced energy consumption - comprises passing solution through chelating resin to adsorb tin ions, passing solution through chelating resin to adsorb iron ions and passing recovered acid through 1st resin.
DERWENT CLASS: M11
PATENT ASSIGNEE(S): (KAWI) KAWASAKI STEEL CORP
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 05214599	A	19930824	(199338)*		7

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 05214599	A	JP 1992-17051	19920131

PRIORITY APPLN. INFO: JP 1992-17051 19920131
AN 1993-300068 [38] WPIDS
AB JP 05214599 A UPAB: 19931123
Regeneration comprises (a) Passing an Sn plating solution through a chelating resin selectively adsorbing Sn ions; (b) Passing the obtd. solution through a chelating resin selectively adsorbing Fe ions to obtain recovered acid; and (c) Passing the recovered acid through the Sn-adsorbed chelating resin to desorb the adsorbed Sn ion in the recovered acid.

USE/ADVANTAGE - The Sn plating solution is efficiently regenerated with reduced energy consumption and without environmental pollution.
Dwg.0/2

L5 ANSWER 32 OF 38 WPIDS COPYRIGHT 2005 THE THOMSON CORP on STN

ACCESSION NUMBER: 1993-211516 [26] WPIDS
DOC. NO. CPI: C1993-093856
TITLE: Phosphonic acid type chelating resin having good selectivity for iron - prepared by phosphatising and hydrolysing chloro methyl gps. of crosslinked polystyrene having given specific surface area and micropore volume.
DERWENT CLASS: A91 J01 M11
PATENT ASSIGNEE(S): (MITU) MITSUBISHI KASEI CORP
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 05138046	A	19930601	(199326)*		5
JP 3240645	B2	20011217	(200203)		5

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 05138046	A	JP 1991-303594	19911119
JP 3240645	B2	JP 1991-303594	19911119

FILING DETAILS:

PATENT NO	KIND	PATENT NO
JP 3240645	B2 Previous Publ.	JP 05138046

PRIORITY APPLN. INFO: JP 1991-303594 19911119
AN 1993-211516 [26] WPIDS
AB JP 05138046 A UPAB: 19940622
A new phosphonic acid type chelating resin with -CH2PO3H2 gps. has a specific surface area of 10-100 m2/g, a micropore volume of 0.2-1.0 ml/g, a cation exchanging capacity of at least 8.0 meq/g, and an acid-alkali cycle strength of at least 95%.

The production of the chelating resin (also claimed) comprises phosphatising and hydrolysing chloromethyl gps. of a crosslinked polystyrene having 10-100 m2/g specific surface area and 0.1-1.0 ml/g micropore volume

USE/ADVANTAGE - The new phosphonic acid type chelating resin has a good selectivity for Fe, as is used to remove Fe impurities from Zn or Ni plating bath.

In an example, 10g of chloromethylated styrene copolymer crosslinked with 10 % of divinylbenzene were immersed in a solution containing 17 ml PCl3 and 37 ml of 1,2-dichloroethane for 2 hrs; after the copolymer was swollen, 13.1 g AlCl3 were put into the solution The mixture was reacted at 60 deg.C for 6 hrs. and the resultant copolymer resin was separated and immersed in 1N HCl solution at 100 deg.C for 5 hrs. It was washed twice with MeOH and twice with water. The acid-alkali cycle strength was measured by passing 2N NaOH solution and 1 N HCl solution alternately 50 times through the column of copolymer resin. The change in volume of the copolymer resin before and after the cycle was measured.
Dwg.0/0

L5 ANSWER 33 OF 38 WPIDS COPYRIGHT 2005 THE THOMSON CORP on STN
ACCESSION NUMBER: 1989-217498 [30] WPIDS
DOC. NO. CPI: C1989-096928
TITLE: Chelate resin prepn.especially for iron ion recovery - by polycondensing phenol(s), aldehyde(s) and aminocarboxylic acids, treating with alkaline earth metal ion aqueous solution etc..
DERWENT CLASS: A21 A91 J01 M25

PATENT ASSIGNEE(S): (MIYO) MIYOSHI OIL & FAT CO LTD
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 01156315	A	19890619	(198930)*		9
JP 2549879	B2	19961030	(199648)		6

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 01156315	A	JP 1987-314815	19871212
JP 2549879	B2	JP 1987-314815	19871212

FILING DETAILS:

PATENT NO	KIND	PATENT NO
JP 2549879	B2 Previous Publ.	JP 01156315

PRIORITY APPLN. INFO: JP 1987-314815 19871212
AN 1989-217498 [30] WPIDS
AB JP 01156315 A UPAB: 19930923
Preparation of a chelate resin comprises polycondensing phenols, aldehydes and aminocarboxylic acids to obtain a resin containing an aminocarbxoylic acid as a functional gp.; treating the produced resin with an aqueous solution of an alkaline earth metal ion in the presence of an alkali hydroxide to make the alkali earth metal adhere to the resin; and then heating it to completely react unreacted phenols, aldehydes and aminocarboxylic acids remaining in the resin.

USE/ADVANTAGE - Effective for obtaining a chelate resin with superior absorption properties by fixing unreacted aminocarboxylic acids, which is conventionally removed by a separate process. The chelate resin prepared has superior selective absorption of metals, especially of iron ions, and is useful for recovering iron ions from the waste water of zinc galvanisation baths selectively.

In an example, phenol 1.0 mol, 37% formalin 2.5 mol, glutamic acid 1.0 mol and NaOH 1.5 mol dissolved in water 13 mol were reacted at 80 deg.C over 10 hrs. and further at 100 deg.C over 15 hrs.. The resin formed was ground, washed with water and dispersed in water of two times by weight.To the dispersion, was added NaOH 1.5 mol and CaCl, 1.0 mol. and it was then heated under reflux for more than 5 hrs.. The chelate resin thus treated was washed with water and with hydrochloric acid, so that an H-type chelate resin was obtd..
0/0

L5 ANSWER 34 OF 38 WPIDS COPYRIGHT 2005 THE THOMSON CORP on STN
ACCESSION NUMBER: 1988-340789 [48] WPIDS
DOC. NO. CPI: C1988-150527
TITLE: Deoxygenating agent for roast coffee - comprises metal **chelate resin**, **iron** powder and alkaline substance.
DERWENT CLASS: D13
PATENT ASSIGNEE(S): (SHIM-N) SHIMADAYA HONTEN KK
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 63251045	A	19881018	(198848)*		8
JP 04027903	B	19920513	(199223)		7

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 63251045	A	JP 1987-85501	19870407
JP 04027903	B	JP 1987-85501	19870407

FILING DETAILS:

PATENT NO	KIND		PATENT NO
JP 04027903	B	Based on	JP 63251045

PRIORITY APPLN. INFO: JP 1987-85501 19870407
AN 1988-340789 [48] WPIDS
AB JP 63251045 A UPAB: 19930923
Deoxygenating agent for roast coffee comprises metal-**chelate resin**, **iron** powder and alkaline substance such as calcium hydroxide.
USE - CO2 gas generated from roast coffee and oxygen in a package can be eliminated and the quality of coffee can well be preserved.
0/0

L5 ANSWER 35 OF 38 WPIDS COPYRIGHT 2005 THE THOMSON CORP on STN
ACCESSION NUMBER: 1987-293335 [42] WPIDS
DOC. NO. CPI: C1987-124493
TITLE: Deoxygenating agent comprising metal-chelated resin and iron powder - useful as preservative for foods, etc..
DERWENT CLASS: A97 D22 E19 G04
INVENTOR(S): NASU, Y; UCHIDA, H
PATENT ASSIGNEE(S): (NIPK) NIPPON KAYAKU KK; (SHIM-N) SHIMADAYA HONTEN KK
COUNTRY COUNT: 5
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
EP 241917	A	19871021	(198742)*	EN	26
R: DE FR IT					
JP 62244443	A	19871024	(198748)		
US 4836952	A	19890606	(198928)		6
JP 04009090	B	19920219	(199211)		5
EP 241917	B1	19920624	(199226)	EN	11
R: DE FR IT					
DE 3779948	G	19920730	(199232)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
EP 241917	A	EP 1987-105535	19870414
JP 62244443	A	JP 1986-87763	19860416
US 4836952	A	US 1987-36782	19870409
JP 04009090	B	JP 1986-87763	19860416
EP 241917	B1	EP 1987-105535	19870414
DE 3779948	G	DE 1987-3779948	19870414
		EP 1987-105535	19870414

FILING DETAILS:

PATENT NO	KIND		PATENT NO
DE 3779948	G	Based on	EP 241917

PRIORITY APPLN. INFO: JP 1986-87763 19860416

AN 1987-293335 [42] WPIDS
AB EP 241917 A UPAB: 19930922
A deoxygenating compsn. (A) comprises: (I) a metal-chelated resin; and (II) an iron powder.

A deoxygenating agent (B) comprises: (a) either (I) of water content below 20% and a moisture source, or (I) of moisture content over 20%; (b) (II); and (c) an alkaine material (III) capable of absorbing CO2. In a deoxygenating agent comprising (1) a compsn. comprising 1 pt. weight (dry basis) chelate resin bound to Fe ion containing below 20% water, and 10-100 pts. weight Fe powder; and (2) a compsn. comprising 1-15 pts. alkaline earth metal (hydr)oxide/pt. weight (1) and 0.05-3 pts. weight calcium metasilicate of 10-80% water content/pt. weight (1); the components (1) and (2) coexist without directly contacting each other.

USE/ADVANTAGE - Useful for preventing spoilage or mildewing or oxidation and insect pest attack on foods, mildew or insect attack on clothing, rusting of metals, or oxidation of other easily oxidisable materials. The agents are useful with high or low moisture content foods. The agents do not use water-soluble materials and have high deoxygenating activity, have controllable deoxygenating speed and do not rely on environmental humidity. Compsns. containing a CO2 absorber are useful for preserving roast coffee.

0/0

ABEQ DE 3779948 G UPAB: 19930922
A deoxygenating compsn. (A) comprises: (I) a metal-chelated resin; and (II) an iron powder.

A deoxygenating agent (B) comprises: (a) either (I) of water content below 20% and a moisture source, or (I) of moisture content over 20%; (b) (II); and (c) an alkaine material (III) capable of absorbing CO2. In a deoxygenating agent comprising (1) a compsn. comprising 1 pt. wt. (dry basis) chelate resin bound to Fe ion contg. below 20% water, and 10-100 pts. wt. Fe powder; and (2) a compsn. comprising 1-15 pts. alkaline earth metal (hydr)oxide/pt. wt. (1) and 0.05-3 pts. wt. calcium metasilicate of 10-80% water content/pt. wt. (1); the components (1) and (2) coexist without directly contacting each other.

USE/ADVANTAGE - Useful for preventing spoilage or mildewing or oxidn. and insect pest attack on foods, mildew or insect attack on clothing, rusting of metals, or oxidn. of other easily oxidisable materials. The agents are useful with high or low moisture content foods. The agents do not use water-soluble materials and have high deoxygenating activity, have controllable deoxygenating speed and do not rely on environmental humidity. Compsns. contg. a CO2 absorber are useful for preserving roast coffee.

ABEQ EP 241917 B UPAB: 19930922
A deoxygenating composition comprising a metal-chelated resin and an iron powder, wherein the metal-chelated resin is a resin wherein a Chelate-type Resin is bound by chelating with a metal ion except Pb2+, Cd2+ and Cr3+.

0/0

ABEQ US 4836952 A UPAB: 19930922
Novel deoxygenating compsn. comprises a metal-chelated resin contg N and an Fe-powder. Metal of the resin is not Pb, Cd, or Cr.

Pref. chelate-type resin comprises a basic anion-exchange resin which can chelate a metal ion, a basic anion-exchange resin to which a chelating agent is bound, or a chelate resin. Chelating agent is disodium-EDTA, trans-cyclohexane diaminetetraacetic acid, triethylenetetramine hexaacetic acid, or ethylenediamine di-o-hydroxyphenylacetic acid.

USE - As an agent for preservation of foods.

L5 ANSWER 36 OF 38 WPIDS COPYRIGHT 2005 THE THOMSON CORP on STN
ACCESSION NUMBER: 1984-142595 [23] WPIDS
TITLE: Aluminium salt refining - by connecting aqueous salt solution with chelating resin to remove iron, copper and gallium.
DERWENT CLASS: A91 E33 J01 M25
PATENT ASSIGNEE(S): (AGEN) AGENCY OF IND SCI & TECHNOLOGY
COUNTRY COUNT: 1

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 59073434	A	19840425	(198423)*		9
JP 02048486	B	19901025	(199047)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 59073434	A	JP 1982-184065	19821020

PRIORITY APPLN. INFO: JP 1982-184065 19821020
**** DATA NOT AVAILABLE FOR THIS ACCESSION NUMBER

L5 ANSWER 37 OF 38 WPIDS COPYRIGHT 2005 THE THOMSON CORP on STN
ACCESSION NUMBER: 1983-55110K [23] WPIDS
DOC. NO. CPI: C1983-053646
TITLE: Safe treatment of organic radioactive waste - comprises oxidative decomposition of waste containing **chelate resins** and **iron** ions with hydrogen peroxide.
DERWENT CLASS: K07 P43
PATENT ASSIGNEE(S): (JAGA) JGC CORP
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 58072099	A	19830428	(198323)*		6
JP 61009599	B	19860325	(198616)		

PRIORITY APPLN. INFO: JP 1981-171880 19811027
AN 1983-55110K [23] WPIDS
AB JP 58072099 A UPAB: 19930925
Treatment of organic radioactive waste comprises oxidative decomposition with hydrogen peroxide of organic radioactive solid waste containing anion exchange resins and/or chelate resins and/or organic filter sludge in aqueous media in the presence of iron ions and/or cation exchange resins. The iron ion concentration of the aqueous media should pref. be 0.01-0.05 mol/l. The amount of
cation exchange resins should be 1% or more and pref. 10% or more of the amount of organic solid waste to be treated. The aqueous media may also contain 0.01-0.05 mol/l Co or Mn ions. The oxidative decompsn. should be carried out at about 70-100 deg.C.

The method is an improvement of the wet oxidative decomposition for organic solid waste having radioactive properties. The method avoids problem of waste gas disposal, since the prod. are mainly CO2 and water. Also, large heating means are not required. Thus, the method is safe, and requires low equipment construction cost and operation cost.

L5 ANSWER 38 OF 38 WPIDS COPYRIGHT 2005 THE THOMSON CORP on STN
ACCESSION NUMBER: 1976-25400X [14] WPIDS
TITLE: Heavy metal-contg waste liquid treated - using a chelate resin.
DERWENT CLASS: A91 D15
PATENT ASSIGNEE(S): (NIRA) UNITIKA LTD
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 51020469	A	19760218	(197614)*		
JP 57058231	B	19821208	(198301)		

PRIORITY APPLN. INFO: JP 1974-92482 19740813
AN 1976-25400X [14] WPIDS
AB JP 51020469 A UPAB: 19930901
The heavy metal-containing waste liquid is coagulated and precipitated by use of calcium salt e.g. calcium hydroxide, calcium oxide, etc. and then it is treated with a **chelate resin**. Chelate **iron** exchange resin is e.g. an amine e.g. diethyltriamine, triethylenetetramine, etc., imino diacetic acid, amino carboxylic acids obtained reduction of the above amines and halogenated acetic acid, alcohol amines e.g. diethanol amine, or ureas as functional groups of styrene, phenol or acryl ester resin.